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NAVY OPERATING COSTS IN THREE DIMENSIONS

by

LCDR Merritt F. Armatrout, CEC
USN

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Merritt F. Armatrout

Bachelor of Science, Civil Engineering

Illinois Institute of Technology, 1952

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Thesis approved by

Karl Stromsem, Ph. D.

Professor of Public Administration

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INTRODUCTION

The Navy expends more than 7.5 billion dollars annually to operate and maintain its ships, aircraft and shore facilities.[1] This expenditure represents the resource cost of military and civilian personnel, fuel, aircraft and ship overhaul, travel, training, utilities, and hundreds of other items required annually to "operate" the Navy. Operating costs do not include the cost of procuring new ships, planes, missiles, facilities or research and development work. The managerial problems associated with the planning, allocating, accounting, and reporting of these costs are many and complex. One major cause of this complexity stems from the fact that the Navy simultaneously manages these costs in three dimensions—a budget dimension, a Department of Defense program dimension, and an organizational dimension.

The administrative budget dimension groups operating costs into appropriation categories and budget projects which represent either functional groupings of cost, such as medical care or ship overhaul, or resource groupings of cost, such as military personnel. In either case, the Navy is the accounting and decision-making entity in this dimension. The administrative budget is the primary financial planning and control instrument and as such forms the base for the Navy's accounting system. At the present time, Navy financial management is oriented toward the budget "view", that is, the annual budget format clearly governs many aspects of financial management at

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[1]Department of the Navy, Office of the Comptroller, Budget Digest, NAVSO P-1355, (November, 1965), p. 42.

Chapter

every organizational level.

The second dimension of management reflects the Department of Defense programming system. Here, operating costs are grouped by program elements, that is, an integrated combination of manpower, equipment and facilities which in aggregate represent a certain military capability. These program elements represent measurable military outputs and are the decision-making and accounting entities for the Secretary of Defense. The Department of Defense programming system is designed to:

> ...integrate the planning and programming and the financial management functions in order to provide better tools for decision-making by the Secretary of Defense and his military advisors; and to create a planning and programming/financial management system that is keyed to continous program decision-making and not just geared to the annual budget cycle. In such a system, not only would budget decisions be program decisions, as they inevitably are now, but program decisions would be budget decisions. That is, decisions to embark on programs would be explicitly decisions to provide the resources required to carry them out.[2]

The programming system provides the Secretary of Defense with the means to perform the tasks assigned to him by the National Security Act, specifically, the direction, authority and control over the Department of Defense.[3]

The third dimension of management is in terms of Navy organization entities. This dimension associates operating costs with specific organizational units such as ships, aircraft squadrons, and shore activities. Management takes two forms in this dimension: (1) Dollar

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[2]Department of the Navy, Office of the Comptroller, Program Change Control System, NAVEXOS P-2416, (August, 1962), p. I-1.

[3]Charles J. Hitch, Decision-Making for Defense (Berkeley: University of California Press, 1965), p. 39.

> ...[illegible] the [illegible] accompanying the [illegible] [illegible] [illegible] to [illegible] [illegible] [illegible]

management; and (2) Resource management. Briefly, dollar management can be thought of as a sub-system of the budget dimension. That is, budget dollars are allotted to organizational entities for certain operating expenses in terms of budget project categories. Resource management is performed centrally by bureaus, that is, bureaus receive and manage the funds to procure resources which they in turn allocate to organizational units. An example of this form is personnel management. Military personnel are centrally managed by the Bureau of Naval Personnel. The use of military personnel is controlled by allocating individuals to organizational units. Within the framework of these two general forms of management, the Navy has many sub-management systems or management programs which are designed to manage specific resources or functions such as facilities maintenance and ship overhaul programs. These programs represent a managerial network of financial and resource control over operating costs. The unit of organization receiving or consumming resources is the usual accounting and decision-making entity in this dimension of financial management.

The existence of these three dimensions in the Navy's financial management system creates a managerial dilemma. Financial planning, accounting, reporting and evaluation are performed separately—yet jointly. That is, each dimension should be "interlocked" with the others to maintain continuity and consistency of planning and operations. The administrative burden associated with these three "views" of the same operating dollar is overwhelming—and perhaps unnecessary. One must ask why these systems cannot be integrated to simplify management. This thesis suggests that one step toward simplification could be

achieved by the development of an integrated accounting and reporting system.

The Navy presently has over one hundred different data systems "feeding" management information to the offices and bureaus in Washington.[4] These systems do not individually accumulate data which is useful to all levels of management. For example, financial data accumulated by the Navy accounting system has to be converted by means of the Navy Cost Information System to be "useful" to the Secretary of Defense. That is, the Navy Cost Information System attempts to translate financial data from the budget dimension into the program element dimension. In a similar manner, the Navy accounting system does not directly provide all financial data for the functional and resource management systems in use. As a result, management is often performed with "bits" and "pieces" of data taken from or translated from several different data systems.

This thesis is directed toward an examination of the three dimensions of financial management described above. The purpose of this examination is to identify fundamental differences which impede the development of an integrated financial accounting and reporting system. Particular emphasis is placed on the problems which these three dimensions create in accounting and reporting Navy

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[4]See the Department of the Navy, Office of Management Information Instruction 5230.1, Inventory of Automated Management Information and Data Systems Used Within the Navy Department and Headquarters, U.S. Marine Corps (October, 1965) for a listing of various data systems.

operating costs in the different views.[5]

An overview of the three dimensions of financial management is presented in Part I. The different purposes of financial management and the different entities which form the basis for management decisions are examined in an attempt to interrelate the three dimensions as well as to identify their differences. Part II examines the different uses, definitions and basis for measuring operating costs in the three dimensions. Part III examines the Navy accounting and Cost Information System. The primary role of the Navy accounting system is seen as one which supports fiscal control and appropriation reporting for the administrative budget. As a secondary role it supports the needs of management accounting. The Navy Cost Information System is seen as a "statistical bridge" which attempts to link budget information to program elements.

Most of the data for this study was obtained from a search of military documents and publications. Some "interpretations" presented differ from "published" practices and procedures. These represent the author's interpretation of "actual practice" based on thirteen years of observation and participation as a Naval Officer. In most cases, these interpretations have been supported by others during recent interviews held with military and civilian personnel assigned to various bureaus and offices in the Washington area.

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[5]The Marine Corps is an integral part of the Naval Establishment but it has been excluded from this study. References to Navy organization, program elements, and financial structure intentionally exclude the Marine Corps, the Navy Reserve and the Marine Corps Reserve.

[illegible][1]

An overview of the three dimensions of financial management is presented in Part I. The different segments of financial management and the different entities which form the basis for management structure are examined. It is attempted to interrelate the three dimensions as well as to identify their differences. Part II examines the definitions, definitions and bases for measuring [illegible] made in the three dimensions. Part III examines the Navy accounting and cost information systems. The primary role of the Navy accounting system is seen as one which supports [illegible] fiscal [illegible] reporting for the administrative budget. Its secondary role is to provide the basis of management accounting. The Navy cost information system is seen as a "structural network" which attempts to link budget information to program elements.

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PART I

THREE DIMENSIONS OF NAVY FINANCIAL MANAGEMENT

CHAPTER I

DEPARTMENT OF DEFENSE PROGRAMMING SYSTEM

Planning

A clear distinction between planning and programming does not exist because they are aspects of the same process. They differ, essentially, in emphasis. Planning is the selection of military actions or capabilities from available or conceived alternatives to accomplish missions which are designed to counter military threats, to achieve a given "posture of defense", or to provide a foundation from which a military capability can be expanded. Programming is the more specific translation of these actions or capabilities into manpower, material, and facilities in both quantitative and dollar terms.[1]

World tensions, national economic conditions, allied defenses, specific military threats, developments of new weapon-systems, and the size of potential enemy forces are but a few of the many factors considered in the defense planning process. These are not finite and measurable planning factors. Therefore, the President and the Congress, with the advice of military and civilian advisors, ultimately sets dollar limitations on defense planning. Annually these limitations are stated in terms of funds allocated for defense. For the purpose

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[1]David Novick, Program Budgeting In the Department of Defense, RM 4210-RC (Santa Monica: The Rand Corp., September, 1964), p. 12.

of this study, the decision making process for selecting specific types of defense activities or capabilities to achieve the desired missions within the probable framework of financial limitation is considered planning.

Effective planning requires a full understanding of the long term implications of decisions to use one type of force structure as against another. The implications must be understood in terms of manpower limitations as well as other resource limitations. A decision to develop a particular weapon-system carries with it an obligation to acquire personnel, training, facilities, equipment, and supporting requirements for the remainder of its useful life. Resources, individually and collectively, are in limited supply. Thus, a choice of optimum systems is of major importance.

If any single aspect of the Department of Defense programming system could be stated as the most "radical" in terms of prior military planning, it would be the degree of objectivity desired in the analytical decision-making process. Decisions by their nature involve future events. Objective decisions attempt to eliminate subjective elements such as "intuition" and "experience" until value judgements enter into the analysis. This desire for objectivity is in part satisfied by systematic analysis of output(effectiveness) versus input(cost). The primary objective of this cost-effectiveness analysis is the systematic examination of alternative actions, in terms of cost and utility, and the clarification of choices open to decision makers.[2]

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[2]Gene H. Fisher, "The Role of Cost-Utility Analysis in Program Budgeting," Program Budgeting, ed. David Novick, (Washington: U.S. Government Printing Office, 1965), p. 33.

of full-time, professional service for retaining specific types of lifeboat activities -- especially in maintaining the United States' traditional leadership in lifeboat design.

Effective lifeboat maintenance and operations is the long term responsibility of dedicated, professional service personnel. The following is based on many years of lifeboat experience and is designed to provide the basic information necessary for the training of lifeboat personnel. It is not intended to be a substitute for practical training, but is offered as a guide to the lifeboat coxswain, and crew, in maintaining their lifeboat in a ready condition.

It has been stated that the lifeboat is the most dependable marine craft in existence, capable of righting herself from any knockdown position. Although this statement is true, it must be remembered that the lifeboat is only as dependable as the men who operate her. Proper training and familiarization with the lifeboat's characteristics are essential for the safety of the crew. The ability of the lifeboat to ride out heavy seas is largely dependent upon the proper adjustment of the sea anchor, drogue, and the skill of the coxswain in handling the lifeboat. Proper maintenance of the lifeboat is also essential to the safety of the crew. Failure of the lifeboat to right herself after capsizing, or failure of the engine to start, may be due to improper maintenance.

Programming

Programming is the determination of resource inputs required to accomplish a program. It concerns not only the requirements for a particular year but also the requirements for the life of a program. Inasmuch as cost estimates are almost meaningless when projected too far into the future, the force structure is projected for eight years and the financial requirements are projected for five years. This Five Year Force Structure and Financial Program is the foundation of the Department of Defense programming system.

The Five Year Force Structure and Financial Program represents the summation of all approved defense programs. It is expressed in terms of three major components: (1) Programs; (2) Program elements; and (3) Resource categories.

Programs.-Programs represent broad, unified missions aggregated into functional classifications. These are major defense "outputs". The nine programs are presently classified as follows:

Program I -Strategic Retaliatory Forces
Program II -Continental Air and Missile Defense Forces
Program III -General Purpose Forces
Program IV -Airlift and Sealift Forces
Program V -Reserve and Guard Forces
Program VI -Research and Development
Program VII -General Support
Program VIII-Civil Defense
Program IX -Military Assistance Program

Program Elements.-Major programs are subdivided into program elements—the smallest output presently controlled by the Secretary of Defense.[3] A program element is an integrated combination of manpower, equipment

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[3]Department of the Navy, Office of the Chief of Naval Operations, The Navy Programming Manual, OPNAV 90-P-1, Part I, (September, 1964), p. I-3-2.

Introduction

Programming is the [illegible] involving [illegible] needed to accomplish a purpose. It [illegible] not only the requirements for a particular use, but also the requirements for the life of a program. Learning various methods [illegible] [illegible] [illegible]

and facilities which in aggregate represent a certain military capability. Examples of program elements are: "Recruit Training, Navy"; and "Fleet Ballistic Missile System". These elements appear in the Five Year Force Structure and Financial Program in terms of missions, related tasks, strength composition, major equipment, approved force levels for eight years, total obligational authority for five years and specific manpower requirements for five years. For purposes of analysis and decisions pertaining to program elements, their costs are divided into three cost categories:[4]

> Research and Development—those costs primarily associated with research and development efforts including the development of a new or improved capability to the point where it is ready for operational use. These costs include equipment costs funded under the Research, Development, Test and Evaluation appropriation and related Military Construction appropriation costs. They exclude costs which appear in the Military Personnel, Operation and Maintenance and Procurement appropriations.
>
> Investment—those costs required beyond the development phase to introduce into operational use a new capability, to procure initial additional or replacement equipment for operational forces or to provide for major modifications of an existing capability. They include Procurement appropriation cost except those associated with the operating category defined below, and all Military Construction appropriation costs except those associated with research and development. They exclude Research, Development, Test and Evaluation; Military Personnel, and Operation and Maintenance appropriations costs.
>
> Operating—those costs necessary to operate and maintain the capability. These costs include Military Personnel, Operation and Maintenance, and recurring Procurement appropriation costs (such as replenishment spares).

The time phase relationship of these costs are shown in figures 1 and 2.

Resource Categories.-Although top level decisions are usually made on the basis of the cost breakdown described above, many require a further

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[4] Ibid., p. I-6-2.

and facilities will be adequate [illegible] medium availability.

[illegible] of [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] facilities exists. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

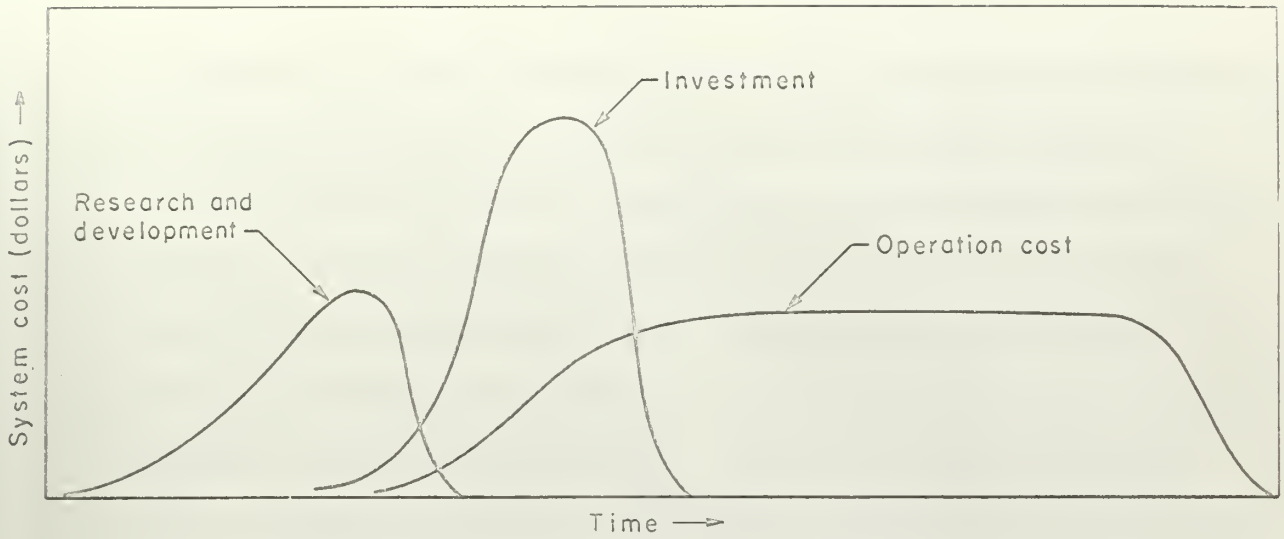

Fig. 1 — System costs time phasing (idealized curves)

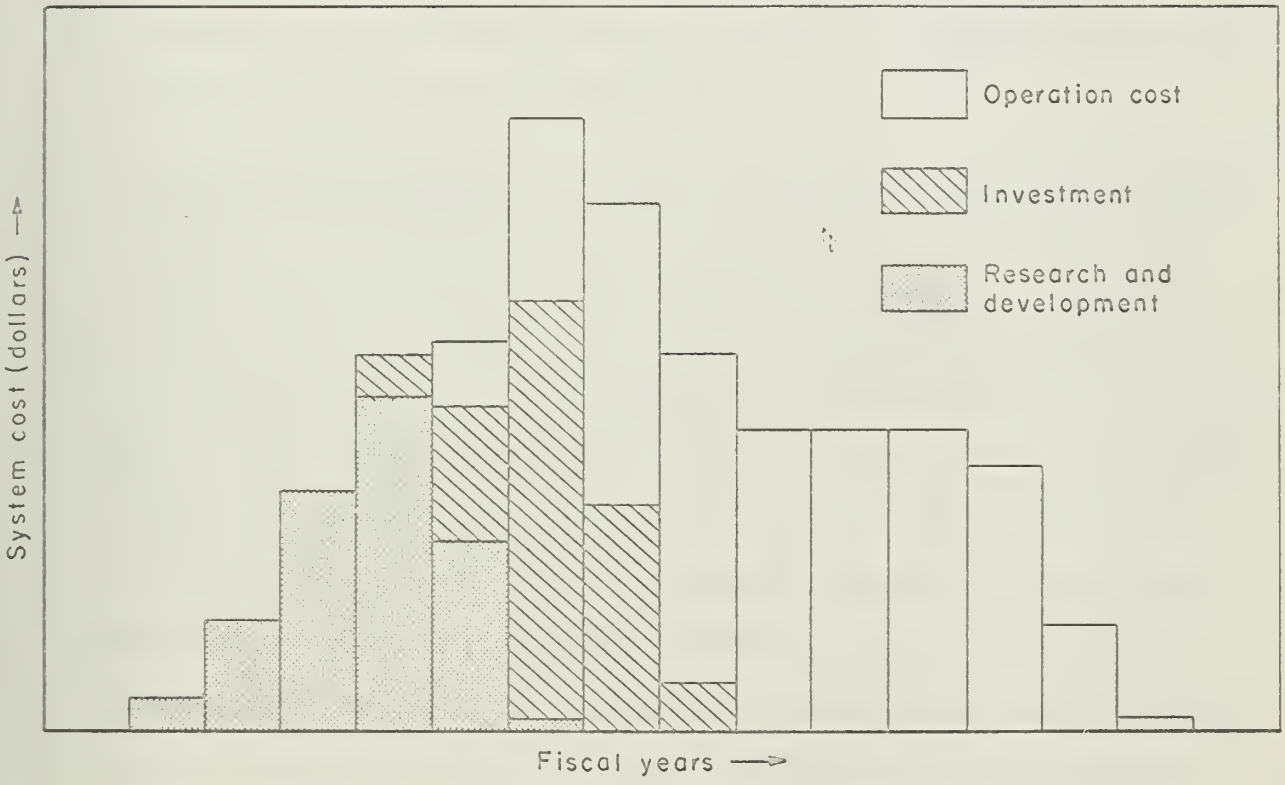

Fig. 2 — System costs time-phasing (by fiscal years)

Source: System and Total Force Cost Analysis, Rand Memorandum RM-2695-PR, April 1961.

breakdown into implied resource requirements. This permits a convenient link between the program elements and operating budgets which are defined in terms of resource inputs. This resource dimension provides the final closure to the input-output equation stated in terms of a single common denominator—dollars. Thus, the sum of all program elements constitutes total military output and the sum of all resource categories constitutes total input. A resource category represents either a single resource such as an item of equipment or a homogeneous grouping of related resources. Most of the resources associated with Navy operating costs are grouped in manpower categories and functional categories. When possible these resources are expressed both in financial and non-financial terms. Generally the homogeneous groupings can only be expressed in dollar terms.

Program Change Proposals— The Five Year Force Structure and Financial Program is a flexible plan, updated monthly, to reflect the latest approved program changes. Flexibility is necessary to incorporate new technological changes and improvements in weaponry. In the words of Secretary McNamara:"..changes will have to be made in the projected programs and entirely new projects, the need for which cannot now be clearly foreseen, will have to be added."[5] Flexibility is not to be confused with loose management. The content of the Five Year Force Structure and Financial Program is controlled through a Program Change Proposal System which is an involved and detailed procedure whereby program changes are reviewed and approved. Program Change Proposals

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[5]U.S., Congress, House, Subcommittee of the Committee on Appropriations, Hearings, Department of Defense Appropriations for 1963, 87th Congress, 2nd Sess., 1962.

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[5] U.S., Congress, House, Subcommittee of the Committee on Appropriations, Department of Defense Appropriations for 1964, 87th Congress, 2nd Sess., 1962.

are submitted when new program elements are introduced, when changes to existing elements are desired, or when any approved program deviates beyond prescribed limits from its original time and cost schedule. Each program change proposal contains an estimate of the lifetime costs of the change broken down into the three cost categories described above.

Budgeting

"...the purposes of budgets are as varied as the purposes of men."[6] This section is not intended as an elaboration of this truism. Rather, the budget is examined as a single financial plan which represents many purposes. For this type of examination, the budget might be thought of as an agreement between three parties— the Congress, the Secretary of Defense (representing the President) and the Navy. The Congress is the "buyer" of Defense. The Secretary is the prime contractor "selling" Defense. The Navy is one subcontractor "performing" Defense. A tri-party agreement is used because the "buyer" enters into "arms length" agreements with the subcontractors during Congressional hearings. A simple analogy might be useful to picture this relationship.

Congress, through the legislative process, represents the citizens of the United States as the "buyers" of defense. The Constitution places the responsibility to provide common defense in the hands of Congress. Also, Congress has the power to determine the course of

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[6]Aaron Wildavsky, The Politics of the Budgetary Process (Boston: Little, Brown and Co., 1964), p.4.

[illegible] [illegible] [illegible] [

the defense of the nation because it has control over defense appropriations. In the words of The Honorable Carl Hayden: "Regardless of the changes in Administration the continuing nature of the Congress is a rudder which lends maturity and stability to the direction of our defense policies and requirements."[7] By its power to withhold, limit, or specify particulars, Congress in fact "draws up" the defense agreement for the Department of Defense.

The Constitution names the President as Commander-in-Chief of the Armed Forces. The President, by virtue of the authority granted by the National Security Act of 1947, as amended, appoints a Secretary of Defense as his principle civilian assistant for all matters relating to the Department of Defense. The Secretary is delegated direction, authority, and control over the Department of Defense. In this capacity, the Secretary might be considered the "prime contractor" for defense.

The Navy can be viewed as a "subcontractor" in this tri-party agreement. The Chief of Naval Operations, as the Senior Naval Officer, is responsible only to the Secretary of the Navy. However, as a member of the Joint Chiefs of Staff, he is an advisor to the Secretary of Defense, the President and the Congress. The National Security Act was carefully written to ensure that the Congress had access to the military advice of the Joint Chiefs of Staff.[8] Congress must legislate on the basis of the best information obtainable from all sources. Congressmen rely to a great extent on the expert military advice of the members of the Joint

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[7]Carl Hayden, "The Senate Appropriations Committee Its Role in Defense," The Armed Forces Comptroller, Vol. 10, No. 13, (September,1965).

[8]The National Security Act of 1949, Section 202 (c).

Chiefs of Staff as well as other military officers who testify during budget reviews. Representative Gerald R. Ford stated the dilemma of his thirteen man Subcommittee on Appropriations for Defense as follows:[9]

> We Congressmen are required to make the best possible analysis of these programs and policies and arrive at decisions which involve billions of tax dollars and possibly our national security....one can argue that seven lawyers, one engineer, one accountant, one newspaper publisher, and three businessmen lack the qualifications to pass on a multi-billion dollar defense appropriation measure.
>
> It teaches us the need for heavy reliance on the representatives of the Executive Branch—the civilian and military leaders of the Department of Defense.

In addition to the advisory relationship, a direct financial relationship exists between military budget sponsors and the Congress. Funds are not authorized for the Department of Defense; rather, they are authorized for specific "entities" of the Department of Defense. This type of authorization, in effect, limits the "prime contractor's" control over the use of the "subcontractors". Therefore, Congress indirectly exerts operating control over the Navy by structuring authorizations into budget projects.

Several complications exist with the above tri-party agreement. The most serious complication is that it takes two forms. The Navy is required to address and comply with the terms of the agreement in program language when speaking to the Secretary of Defense and in appropriation language when speaking with the Congress.

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[9]Gerald R. Ford, "A Congressional View of Technology," Data, (March, 1963), p. 37.

[illegible] of [illegible] as well as other civilian officials who [illegible] [illegible]. [illegible] [illegible] [illegible] the [illegible] of [illegible] the [illegible] as follows:[9]

> [illegible] of [illegible] and [illegible] [illegible] [illegible] ... [illegible] [illegible] [illegible].
>
> [illegible] of the [illegible]—[illegible] and military leaders of the Department of Defense.

In addition to the previous relationship, a third financial relationship exists [illegible] and the Congress. Funds are not authorized for the Department of Defense; rather, they are authorized for specific "entities" of the Department of Defense. This type of authorization, in effect, limits the further [illegible] control over the use of the "[illegible]". Therefore, Congress [illegible] [illegible] over the DoD by [illegible] [illegible].

Several [illegible] exist that the entire [illegible] agreement. The most pertinent requirement is that it takes two forms. The DoD is required to [illegible] with the terms of the agreement in [illegible] to the [illegible] of Defense and in appropriations [illegible] with the Congress.

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[9]Ronald L. [illegible], "[illegible]," [illegible] ([illegible], 1975), p. 17.

Program Budget.- The Five Year Force Structure and Financial Program has become the basis for the preparation of the annual program budget. Ideally, the annual budget would be a "one year slice" out of the long range plan; however, in practice the problem is not that simple. The annual budget cycle encompasses approximately twenty-one months from preparation through execution.[10] Many changes occur in the Five Year Force Structure during the budget preparation period which effects the final size and shape of the budget document which finally goes to Congress. Prior to final preparation, the President and his economic advisors must determine the overall size and shape of the Federal Budget. The share which the Department of Defense receives may or may not coincide with the financial program set forth in the Five Year Force Structure and Financial Program. The Director of the Bureau of the Budget sends a "policy letter" setting forth a tentative budget program in the summer, approximately one year before the beginning of the fiscal year for which the budget is being prepared. Final budget decisions for the Department of Defense are often deferred until December—just before the President makes his State of the Union message to Congress.[11]

Thus, the preparation of the program budget document involves a penetrating reexamination of the data taken from the Five Year Force Structure and Financial Program to obtain an overall balance between programs and to stay within the final guidelines established by the President.

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[10] Wildavsky, op. cit., p. 194.

[11] David J. Ott and Attiat F. Ott, Federal Budget Policy (Washington: The Brookings Institution, 1965), p. 17.

Since 1962, the Defense budget has been presented to Congress in terms of programs as well as appropriations.[12] The program presentation is in broad terms even though the interrelation with appropriations is inserted into the record. The details of the budget are submitted in the traditional appropriation format. These two presentations represent the same financial plan--viewed in different dimensions. More important is the fact that Congress reviews and approves budget requests in terms of appropriations, not programs.

Administrative Budget.-This budget is the traditional annual document which expresses, by appropriation title, the financial requirements necessary to support programs approved in the Five Year Force Structure and Financial Program. The specific format of the various appropriation titles is specified by Congress and represents the manner in which it wishes to review and ultimately approve requests for funds. The administrative budget spans a three year period. The prior year, the current year and the budget year are each presented for review. In effect, this period covers the two years prior to the year for which funds are being requested. Significant differences between the budget year and prior years are usually questioned by Committee Members of the Subcommittee.[13] This is a paradox. The administrative budget is reviewed and approved by comparison with past experience data even though it is prepared on the basis of the most recent approved programs

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[12]House, Subcommittee on Appropriations, op. cit., p. 2.

[13]Department of the Navy, Office of the Chief of Naval Operations, The Navy Programming Manual, Part I, OPVAV 90-P-1, (September, 1964), p. I-5-1.

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[12][illegible], Information on Appropriations, op. cit., p. 4.

[13]Department of the Navy, Office of the Chief of Naval Operations, The Navy Programming Manual, Part I, OPNAV 90-P-1, (September, 1961), p. I-1-3.

which are projected five years into the future. The Secretary of Defense makes budget decisions based on costs projected ahead in time; Congress makes budget decisions, based to a large extent, on the past.[14] In any case, Congress reviews budget requests and approves funds in terms of appropriations, not programs. Consequently, Department of Defense programs must be adjusted to reflect appropriation limitations.

Annual appropriations expire on June 30 of the budget year. Multi-year appropriations or continuing appropriations are granted for items of construction or procurement which have long lead times or construction periods.

The Navy receives funds in five categories under the following Appropriation Titles: Military Personnel; Operation and Maintenance; Procurement; Research, Development, Test & Evaluation, Navy; and Military Construction. Figure 3 shows the relationship which existed between these Appropriation Titles and the Department of Defense Major Programs for fiscal year 1966.

The discussion to this point has focused on the structural aspects of the Department of Defense Program System and the appropriation method of funding by Congress. It is not intended to be a comprehensive study of either process; rather, it is intended to point out the basic difference in the structures of the two views of the same budget in an attempt to better appreciate the data collection

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[14]See Wildavsky, op. cit. for an interesting discussion of the "practical" problems which program budgeting presents to Congress.

each are considered separately with the others. The Secretary of Defense makes budget decisions based on total projected costs in these programs whose budgets fluctuate, based to a large extent, on the past.[11] In any case, Congress reviews budget requests and approves funds in terms of appropriations, not programs. Consequently, Department of Defense programs must be adjusted to reflect appropriation limitations.

Annual appropriations expire at end of the budget year. Multi-year appropriations or continuing appropriations are granted for items of construction or procurement which have long lead times or construction periods.

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[11]See Wildavsky, *op. cit.*, for an interesting discussion of the "practical" problems which attend budgeting requests in Congress.

FISCAL YEAR 1966

Program / Appropriation	Military Personnel [a]	Operation Maintenance [a]	Res., Test., Dev., Eval. [a]	Procurement Navy [a]	Military Construction [a]
Strategic Retaliatory Forces	84.3	328.5	121.5	247.8	-
Continental Air & Missile Defenses	1.7	14.6	1.0	.9	-
General Purpose Forces	1942.1	1785.3	330.5	6428.3	150.4
Airlift and Sealift Forces	22.5	37.7	-	76.6	-
Reserve and Guard Forces	186.4	89.6	-	38.6	9.5
Research and Development	57.4	21.2	975.5	33.7	11.2
General Support	1164.7	1356.3	12.2	317.9	252.2

(Millions of Dollars)

Fig. 3 Correlation Between Navy Budget-Five Year Force Structure

Source: Department of the Navy, Budget Digest Fiscal Year 1966, November 30, 1965, p. 40.

[a] Excludes Marine Corps., Marine Reserve, and Naval Reserve. Rounded to nearest tenth.

problems which are encountered during the execution phase of the budget cycle. Before going to the next chapter, one additional feature of appropriations should be mentioned. Congress frequently writes "into the Act" certain restrictions which are binding on the Military Services. A few examples of these "special interest" items are given below to indicate the need for unusual "built in" fiscal controls throughout the budget year.[15]

> Operation and Maintenance funds totaling $141 million for the Navy and $20.5 million for Marine Corps are available only for the maintenance of real property facilities.
>
> Not less than $7.5 million of Department of Defense funds available for travel expenses shall be available only for commercial passenger sea transportation service on American-flag vessels.
>
> Annual appropriation obligations during the last two months of the fiscal year may not exceed 20 percent (except for Reserve Training programs).
>
> Of the funds provided Department of Defense for the services of the Military Air Transport Service, $100 million is available only for procurement of commercial air transportation; $46.1 million of which is applicable to the Navy.

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[15]Department of the Navy, Office of the Comptroller, Budget Digest (Fiscal Year 1966), p. 35. (Italics added).

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CHAPTER II

NAVY MANAGEMENT

Introduction

The administrative budget represents the primary source of funds available to the Navy. The budget document sets forth, in rather precise terms, the intent of Congress regarding the use of funds. Classification of funds in appropriation format represents a positive method of controlling the use of funds in the manner prescribed by Congress. Funds cannot be transferred from one "pocket" to another without Congressional approval.[1] Consequently, these "pockets" of money receive considerable attention during both the formulation and execution phases of the budget process.

Critics have accused government agencies of considering the budget as an end unto itself rather than an effective planning and control instrument.[2] To the extent that budgets are used solely as a device to obtain funds, this criticism is justified; however, due consideration must be given to the fact that a budget represents much more to a government agency than it does to a private firm. Aside from being a financial plan, usually well founded and documented, it

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[1]Department of the Navy, Bureau of Naval Personnel, Financial Management in the Navy, NAVPERS 10792-A (March 1962), p. 39.

[2]Jesse Burkhead, Government Budgeting (New York: John Wiley & Sons Inc., 1956), p. 246.

[illegible]

[illegible]

[illegible]

represents the one "sale" of each year, so to speak, which produces all the revenue. In this perspective, it represents a full year of events—not just a plan which projects possible events based on expected sales forecasts. Congress does not look favorably on requests for changes during a budget year.

The relative inflexibility of the budget has encouraged its users to think of it as a financial goal. In this respect, attention has been focused on the maximum resources which the budget can obtain rather than on the amount of money being spent for a specific amount of resources. That budgets represent financial goals is evidenced by the charts which can be found in nearly every manager's office. These charts are financial plans for the current year. They are more commonly called obligational plans because they depict the planned and actual obligations of funds being managed. It is rare indeed to find a plan which does not terminate at the approved budget allocation. When actual obligations fall below the plan, managers usually take the same expedient action as when they go above the plan. Staying on the plan is the goal. This fact is due in many cases to the difficulty encountered in formulating more precise performance-type budgets. Performance budgeting is not always as objective as the name implies because performance (output) is not always measurable.

An economic view of budgeting assumes that: "For any level of either budget or objective, the choices that maximize the attainment of an objective for a given budget are the same choices that minimize

the cost of attaining that objective."[3] This argument is the basis for cost-effectiveness analysis. If objectives are fixed, measurable and identifiable costs should be minimized to reach these objectives. If on the other hand the objectives are not subject to quantitative measure, then minimizing the cost of attainment becomes a pointless expression. Navy organizational units are seldom assigned operating objectives which are precise enough to identify absolute attainment. Objectives for organizational units are often couched in vague terms such as "provide support", "maintain a condition of readiness", "operate and maintain", and "service the fleet". Specific and measurable objectives seldom exist. Unlike operating budgets in private industry which usually vary with output, Navy operating budgets are essentially fixed in advance. Consequently, the bargaining during budget reviews ultimately sets operating objectives by limiting the amount to be spent on them. This amount is identifiable and measureable, and usually is thought of as the objective to be achieved. As a result, government managers often concentrate on how much is left to spend rather than on how much has been spent. In effect, maximun use of available funds is the methods of achieving their goal—not minimizing costs as advocated in business.

This "maximizing" spending philosophy receives a great deal of criticism from business oriented financial managers. Why should an agency spend as much as it possibly can on everything? Is there no end to need? The painfully obvious answer is that "need" is not always quantifiable. To the operating manager in the field, "need" means the

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[3]Charles J. Hitch and Roland N. McKean, The Economics of Defense in the Nuclear Age (New York: Atheneum, 1965), p. 2.

the need of achieving such objectives.[16] This requirement is the basis for results-management analysis. If objectives are clear, measurable and identifiable, costs should be minimized to reach these objectives. If on the other hand the objectives are not subject to quantitative measure, then measuring the cost of attainment becomes a subjective expectation. Many institutional staff are asked to explain operating objectives which are really an attempt to identify absolute attainment. Objectives for consolidations, costs and other measures in vague terms such as "provide support", "maintain a condition of readiness", "improve and maintain", and "operate the plant". Benefits and measurable objectives cannot exist. Unlike operating budgets in private industry which usually vary with output, Navy operating budgets are developed as input is measured. Consequently, the Comptroller having output measures ultimately sets operating objectives by limiting the amounts to be spent on each. This amount is identifiable and measureable, and usually is thought of as the objective to be achieved. As a result, Government managers often concentrate on how much is left to spend rather than on the work has been done. In effect, analysis [illegible]

The distinction between efficiency receives a great deal of criticism from business oriented financial managers. Why should an agency spend as much as it possibly can on everything? Is there no end to needs? The basically correct answer is that "need" is not always quantifiable. In the operating budget of the Navy, "need" means the

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[16] Charles J. Hitch and Roland N. McKean, *The Economics of Defense in the Nuclear Age* (New York: Atheneum, 1965), p. 26.

objective, expressed in dollar terms, in his approved operating budget. This is not to imply that funds are spent simply because they have been approved. Rather, funds are spent to improve the "end product" which so often cannot be measured in terms other than dollars.

Program elements represent approved objectives. In broad terms they can be quantified in terms of numbers of weapons such as aircraft carriers. Aircraft carriers can be further equated to numbers of men, armament, capacity, destructive capability and other terms. But, this does not mean that the carrier is "ready" to fight a war. Crew training, condition of equipment and many other factors, which are difficult if not impossible to measure, determine the carrier's "readiness". Up to a saturation point, spending more on operating expenses is synonymous to obtaining more readiness—the mission of the operating commander. Failure to spend toward improved readiness would be tantamount to not doing his best job. Consequently, maximizing expenses up to budget limitations usually is not considered wasteful by operating managers unless the expenses are for unnecessary items. Accepting the existence of this philosophy helps to "explain" the method in which the Navy manages its finances. Navy management often reflects the desire to maximize utilization of available resources rather than to minimize expenses. Another characteristic evident in Navy financial management is the traditional desire to "free" operating commanders from as many logistic and administrative details as possible to permit them to devote as much of their time as possible to the improvement and operations of their units. Navy management also reflects the unique logistic problems which the Navy encounters due to the mobility of its weapon systems, to the variety and size of its ships and aircraft, and to their geographic

dispersion around the world. Organizational units are frequently thousands of miles away from the nearest logistic support ashore. As a result, the planning and controlling of resources is a very difficult task.[4] The Navy's organization reflects a delineation of logistic responsibility along functional lines to cope with the complexities of their logistic problems. Each Navy bureau is responsible for specific types of logistic support for the entire Navy.

Organization: An Overview

The Secretary of the Navy exercises his responsibilities by means of two main lines of control in a bi-linear system of organization. One chain of command extends through the Chief of Naval Operations to the operating forces and the other through bureaus and offices to the support elements of the Navy. This bi-linear system envisions a "user-producer" relationship between the operating forces(users) and the support elements(producers).[5]

The support element is further divided into two principle parts: (1) The Naval Material Support Establishment; and (2) Other Supporting Organizations. The Naval Material Support Establishment consists of the Office of Naval Material(headquarters), the Bureau of Naval Weapons, the Bureau of Ships, the Bureau of Supplies and Accounts, the Bureau of Yards and Docks, and the shore activities assigned to these bureau and office components. The Other Supporting Organizations include the

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[4]Department of the Navy, Navy Logistic Task Force, Logistic Support of the Navy, (June, 1963), p. II-5.

[5]The Navy has announced a plan to modify the present organization such that supporting elements will report directly to Chief of Naval Operations. Also Naval Material Establishment bureaus are to be renamed.

Bureau of Naval Personnel, the Bureau of Medicine and Surgery, the Office of Naval Research, offices of the Staff Assistants to the Secretary of the Navy, and the shore activities assigned to these components.

The operating forces consists of the several fleets, seagoing forces, seafrontier forces, district forces, Military Sea Transportation Service, and the shore activities and commands assigned to these components.[6]

Each bureau and office has a functional responsibility to provide support either directly or indirectly to the operating forces as well as to each other. For example, the Bureau of Naval Personnel has Navy-wide responsibility for the acquisition, training, assignment and pay of military personnel. The Bureau of Yards and Docks has primary responsibility for all facilities maintenance and engineering ashore. The Bureau of Medicine and Surgery has responsibility for all medical care throughout the Navy. In addition to technical responsibilities, the bureaus are responsible for financial and resource management in their respective functional areas.

Resource Management

Most of the operating costs of program elements and Naval organizational units are funded by two appropriations: (1) Operations and Maintenance, Navy; and (2) Military Personnel, Navy. Some support equipment, normally considered an operating cost, is funded through the

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[6]Department of the Navy, Office of the Secretary of the Navy, General Order No. 5, (January, 1965).

[illegible] of local Government, the Bureau of Building and Housing, the Office of Rural Planning and [illegible] of the Chief Executive to the Secretary of the Cabinet, and the Bureau of Building and Housing to the Secretary of Local Government.

The Department should be the central Cabinet, executive forum, maximizing [illegible], [illegible] choice, building the [illegible] capital, and the local authority and community [illegible] necessary.[1]

[illegible] the Office has a continual responsibility to provide [illegible] clear [illegible] or [illegible] to the operating forces as well as to [illegible] other. For example, the Bureau of Rural Development has [illegible] responsibility for the acquisition, leasing, maintenance and [illegible] of military personnel. The Bureau of Parks and Roads has primary responsibility for all [illegible] maintenance and maintenance systems. The Bureau of Building and Housing has responsibility for all medical [illegible] construction [illegible]. In addition to technical responsibilities, the Bureau has responsibility for [illegible] and [illegible] management to [illegible] [illegible] agencies.

[illegible] Management

[illegible] of the operating areas of program planning and [illegible] [illegible] units are [illegible] of the [illegible] [illegible] and [illegible] [illegible], [illegible] and [illegible] [illegible]. [illegible] [illegible] [illegible], [illegible] [illegible] [illegible]

appropriation, Procurement, Navy.[7] These procurement items are usually consumed during the course of the year and are recurring in nature; therefore, they are classified as operating costs.

In order to simplify the the financial interrelation between operating costs of program elements and organizational units, many interrelations between bureaus and offices will be omitted. These omissions will not detract from the purpose of this chapter which is to examine the differences among the program view, the appropriation view, and the Navy view of the same operating dollar. An additional simplification is made by assuming that a program element consists of a single hypothetical aircraft carrier. An aircraft carrier is used because it depends on nearly every bureau for some financial or resource contribution in its normal course of operations.

Figure 4 depicts some of the major resource contributions made by bureaus to the operating costs of this hypothetical program element. These resources are either procured by the bureaus or charged directly to bureau fund accounts. That is, the cost of these resources are not charged against the ship's operating budget. Two important points are to be observed: (1) By far the largest dollar cost of operating the carrier are not accounted for directly by the "user"(aircraft carrier), that is, the bureaus provide the resources without reimbursement; and (2) The bureaus provide the same type of resources to all other operating units as well as to all shore activities. For example, the Bureau of Naval Personnel allocates military personnel to all organizational units in the Navy without financial reimburesement.

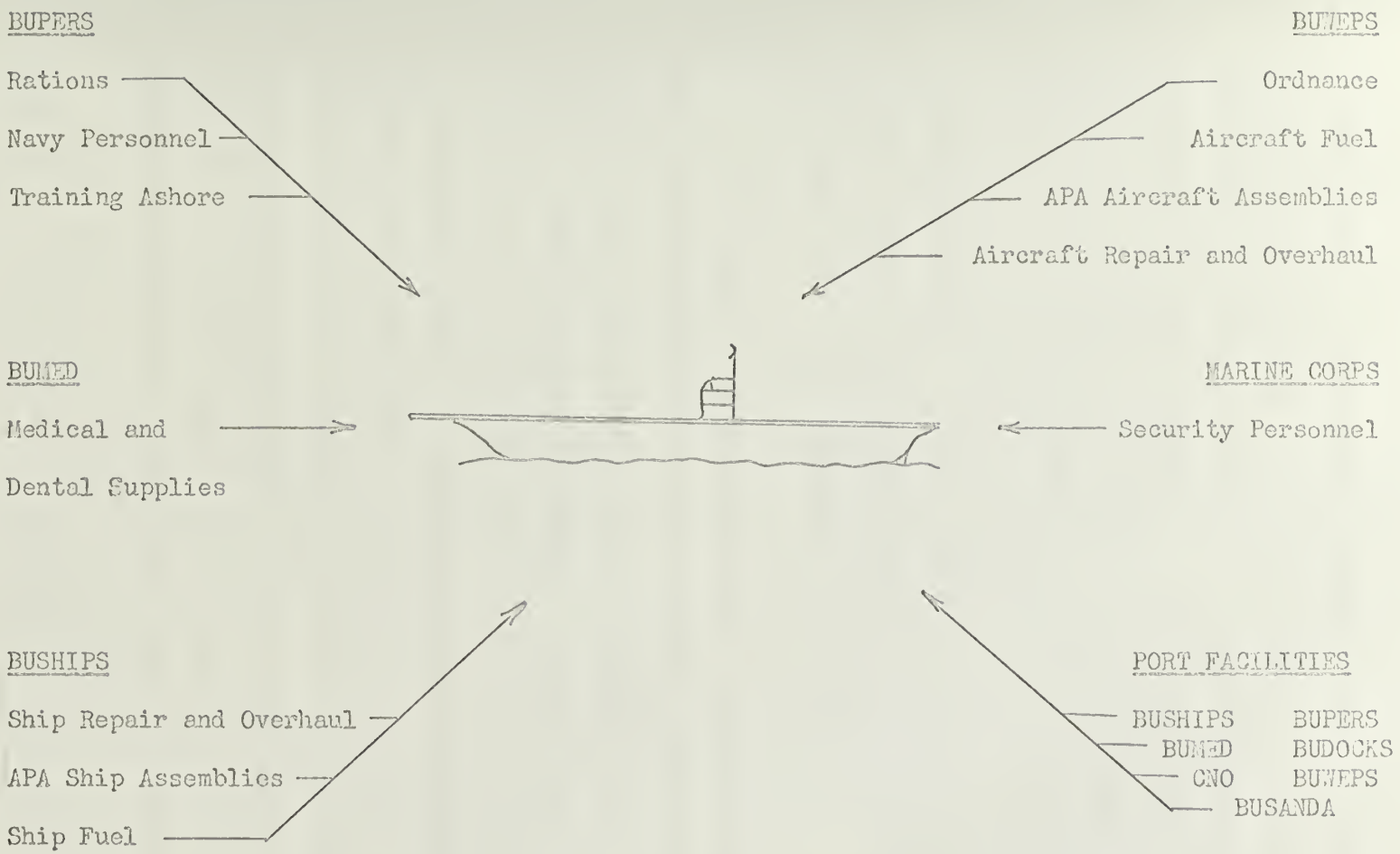

Fig. 4 --Bureau Controlled Resource Contributions to Fleet Operating Costs

Funds to obtain the resources described above are allocated to the bureaus through appropriation title accounts.[8] For example, the appropriation Operations and Maintenance, Navy, is subdivided into eight budget activities or accounts. With one exception, each of these budget accounts is assigned to a single responsible bureau and represents the funds authorized to perform its operations and maintenance mission. Bureau functional missions extend across Navy organizational lines for technical and financial control. For example, the Bureau of Yards and Docks manages the funds for facility maintenance throughout the Navy. In a like manner, the Bureau of Ships manages the funds for the cost of maintaining and operating the ships in the Navy regardless of their organizational attachment.

Referring back to the user-producer concept of organization, the bureaus might be thought of as central resource managers. The "users" express their needs and the "producers" meet the needs as best they can within the funds authorized. In many respects, the work of some bureaus can be likened to that of inventory managers. Attention is more often focused on aggregate resource requirements than on specific organizational requirements. For accounting purposes, operating costs are incurred when the resources are procured by the bureaus, not when they are consumed by the "users". Once procured, the resources are allocated among the "users" to obtain the best possible balance. This balancing process is also complicated because the resources often must

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[8]The Bureau of the Budget, the Secretary of Defense and the Secretary of the Navy each are involved in the actual allocation of funds between the Congress and the bureaus and they each influence the final amounts received. However, this process is not material to the identification of operating costs to program elements and organizational units.

[illegible] [illegible] [illegible] [

be allocated to other "producer" bureaus as well as to the "users". Thus, the user-producer relationship is little more than a "useful concept" because "producers" are also "users" and in some cases, "users" are also "producers". In any case, this aggregate resource management leads to the maximizing spending philosophy because each manager wants to "keep his bin full" so to speak. The consumer of the resources seldom has his "needs" fulfilled; therefore, both supply and demand are limited only by budget authorizations for the specific resources.

Budgets prepared by the bureaus and offices are based on past budgets, historical operating statistics, and anticipated changes in the type and level of operations for the budget year. These budgets can be considered in two parts. The first part consists of bureau controlled resource requirements, that is, the funds required to obtain the resources which the bureau's "furnish" to operating units and shore activities without reimbursement. The second part of the budget contains the funds required for allocation directly to organizational units. This part represents the sum of the operating budgets of the organizational units. The budget document does not make a distinction between these two parts; therefore, the "producers" allocate both funds and resources to organizational entities. Budgets prepared for operations and maintenance do not identify organizational units. For example, the Bureau of Ships portion of the budget for ship's fuel is not supported by detailed requirements for each ship; rather, the budget contains "on the average" figures which portray the probable cost of fuel for the budget year. Statistically, these average figures should be quite accurate because they are made over a large population of ships. A comparison of a single ship's fuel cost with the average would reveal

a wide deviation. These same statistical averages are used to allocate operating costs to program elements. Here, considerable error can be introduced because a small number of units are usually involved and the statistics are less accurate for the same but smaller population.

The operating budgets prepared by organizational units include only those costs which are incurred directly by the unit. This budget represents the funds which are actually received by the ship or shore activity. For ships, this budget covers only day-to-day purchases of general usage material such as paint, rags, brooms, common-type spare parts and other "general store" types of material available through the Navy Stock System. In dollar value, this operating budget represents only a fraction of the total operating cost of the unit. The Bureau managed portion of operating costs are controlled through allowance lists for military personnel, ordnance, special spare parts, and medical supplies; through quotas for personnel training; and through overhaul schedules for ship and aircraft overhauls. Port facilities ashore are planned and provided on an aggregate basis to meet the needs of all the operating forces. Control over the use of shore facilities is provided by ship operating schedules and assignments to homeports. Since ships assigned to different program elements often utilize the same port facilities, the division of shore station operating costs to the various program elements is even more difficult than the association of direct operating costs to program elements.

Financial control over expenses of shore activities is exercised

by means of allotments or sub-allotments. Allotments are issued by bureaus or offices to the Commanding Officer of the shore activity. When more than one bureau function is carried on at an activity, several allotments are issued to the Commanding Officer by the several bureaus. As a result, the operating costs of the shore activity might be funded by four or five different operating allotments, one for each bureau. This interwoven fiscal control is discussed in more detail in later sections.

CHAPTER III

THREE ENTITY VIEWS

Conceptually, the Department of Defense programming system is a comprehensive and continous cost-effectiveness analysis of a time phased resource and financial plan. At the very highest level of planning, total defense outputs, in the form of major programs, are matched with potential aggressions. The specific types of aggressions are matched with specific types of military output in the form of program elements. Each program element has a primary military mission. Thus, major missions are subdivided into program missions which are associated with specific weapon systems from each military service. Program elements are the "measurable" mission oriented military outputs of the Department of Defense. The weapon systems associated with these outputs are subjected to rigorous cost-effectiveness analysis to select those which provide the most military output for a given cost, or those which cost the least for a given military output. Once approved by the Secretary of Defense, program elements are summed up in a Five Year Force Structure and Financial Plan which represents the approved size and shape of total defense output stated in both physical and financial form for a prolonged period into the future.

All organizational units assigned to a program element are from a single military service. However, the grouping of organizational units in program element format does not always reflect the grouping of the units in the Navy organizational structure. For example, all

CHAPTER III

aircraft carriers of a certain class are grouped in one program element regardless of their attachment to fleets. In the case of shore activities, functional components of a single organizational unit might be presented in several different program elements.

The program element is the smallest "entity" managed by the Secretary of Defense and represents the entity for analysis, decision-making, cost collecting and reporting. From the program viewpoint, Navy operating costs merely represents the summation of all Navy program element operating costs. Navy operating costs in summary form, that is, in a form where the Navy is the entity, has little relevance in program decision-making. The relevant data are those which present program element cost; those costs associated with "measurable" military outputs. The Navy, as an entity, is not a measured military output in the Department of Defense programming system.

Even though the Navy does not represent a decision-making financial entity from the Department of Defense view, dollar "needs" for the Navy are grouped as an entity for budgeting purposes. If the total cost of the Five Year Force Structure for a given year is in agreement with the President's fiscal program and if the estimated cost of each program element is accurately described in the Department of Defense Financial Program, the annual budget submitted to Congress represents a one year "slice" out of the Five Year Plan. The budget for each service is then a summation of all their program elements. Budget formulation, however, begins with service requirements stated in appropriation and budget project terms—not program element terms.

During budget reviews, the Congress, the Bureau of Budget, and

the Secretary of Defense all view Navy operating requirements in terms of appropriations and budget projects. The budget document is not segregated into program elements. The entities for budget reviews are Navy internal programs such as the ship overhaul program and the facilities maintenance program. Here, budget projects are the decision entities. Budget decisions on these entities are made after several factors are considered. First, last year's approved budget provides an essential guide. Previous expenditures often represent some sort of performance standard, especially in those areas where industrial or commercial type "norms" are not applicable. In those areas where rather accurate standards are available, the number of units or degree of performance is still subject to debate.

Most program decisions do not provide monetary guidance for budget projects. However, program decisions establish limits on operating costs of the separate program elements; therefore, the total operating budget of the Navy cannot exceed the sum of the operating costs established for all Navy program elements. Since operating requirements of organizational units assigned to different program elements cannot be directly identified in budget projects, there is no method of superimposing program element limitations in budget form. Consequently, program decisions on operating costs are not budget decisions. In fact, budget decisions made in terms of budget projects are translated into program financial plans. Also, Congress approves budgets in terms of appropriations and budget projects—not programs. As a result, financial management in the Navy centers on budget entities instead of program entities. From the standpoint of financial control over the operating costs of specific program elements, program element

decisions are seen as "expectation" decisions. They establish expected levels of operating cost expenditures over the life of the programs. If actual spending exceeds the expected spending level, programs should be reviewed on the basis of new expected costs. For planning purposes, operating budget requests should be matched against expected budget costs. Present budgets do not permit such a "matching" because program elements are not specifically identified in the budget. Such a comparison would require budget entities to be subdivided into organizational or functional entities which in turn could be grouped into program element entities. The three dimensions of financial management should "meet" in such a comparative review if the three "views" are to interlock. Such a "meeting" cannot take place until accounting entities or costing entities are developed which are common to the three dimensions of management.

The financial entity for operating costs in program format is the program element. The entity in the budget format is the budget project. The entity in terms of operating control is fragmentations of organizational operating costs. That is, the total operating cost of an individual organizational unit is not controlled as an entity. Rather, segments of operating costs are managed by different bureaus. Some segments are managed in dollar terms, others in physical terms. For fleet operating units, by far the largest dollar segment is managed in resource terms. Consequently, the organizational unit is a financial entity for only a small segment of its total operating cost. Many of the Navy's sub-management systems use the organizational unit as the accounting entity (non-financial) for physical resources but these accounts often cannot be translated into dollar equivalents

which are meaningful when compared to obligation data for budget projects. This difficulty stems from the differences in meaning and measuring of operating costs in the three dimensions. These differences are examined more in the next chapter.

The present Navy organization results in fragmented financial management over operating costs. The total operating cost of an individual operating organizational unit is seldom ever accumulated or presented in budget form; consequently, total operating costs of organizational entities are not managed by any single person or organization.[2]

In addition to the non-allignment of program elements with appropriations and budget projects, Navy organization does not match either the budget or the program structure. Consequently, a three dimensional interrelationship emerges. Figure 5 depicts this relationship in graphic form.

The burden of three dimensional financial management exists within bureaus when internal organizations overlap budget and program financial categories. Figure 6 depicts such a condition at the Bureau of Yards and Docks where internal organization does not "match" either budget projects or Department of Defense programs.

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[2]Certain industrial/commercial-type activities prepare total operating budgets but these activities are financed by reimburseable fund accounts. They do not use the administrative budget process for direct funding purposes.

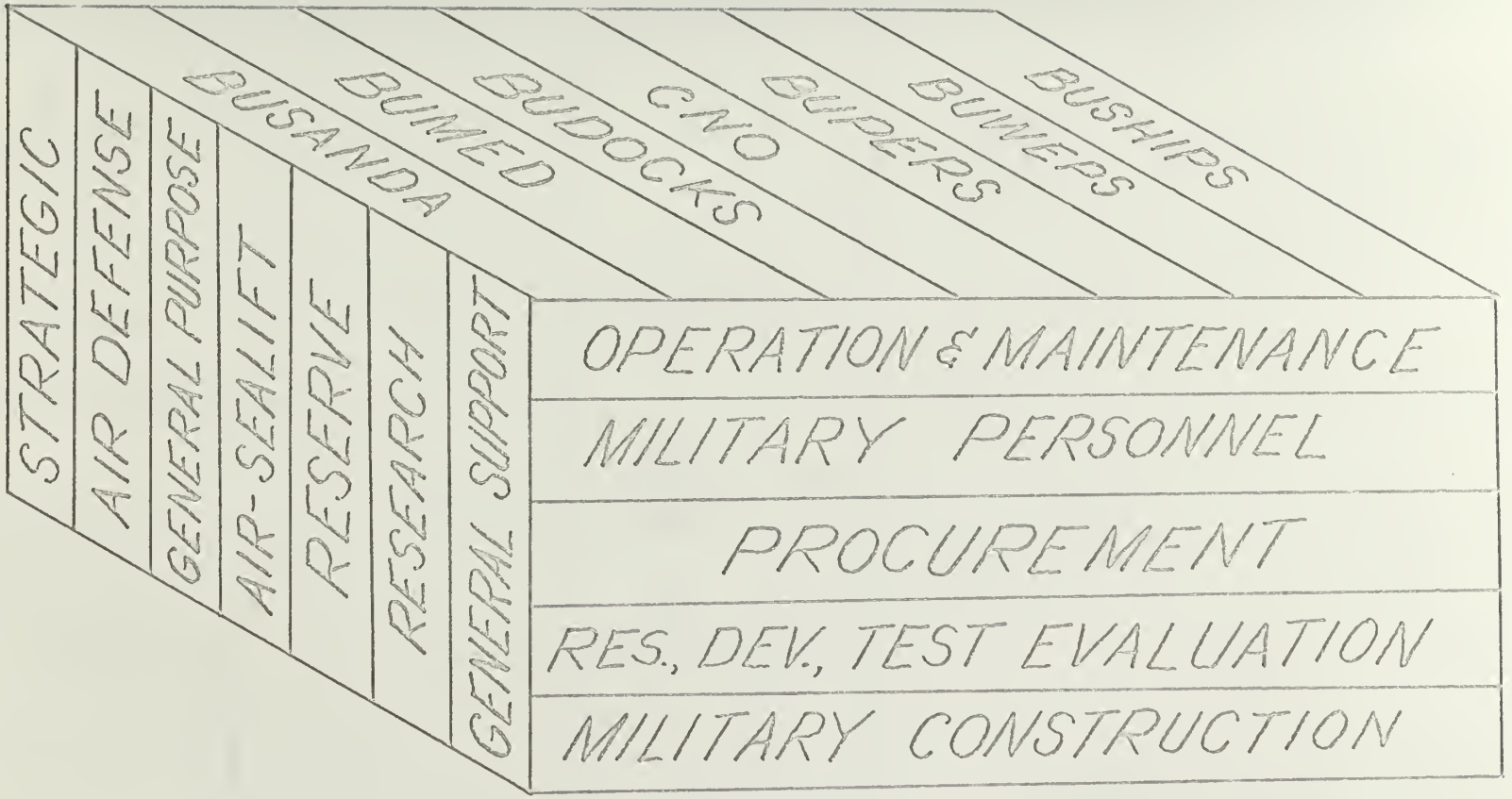

FIG. 5 ORGANIZATION-APPROPRIATION-PROGRAM INTERFACE

Source: Navy Department Program Information Center, Presentation Notes for "DOD PROGRAMMING SYSTEM IN THE DEPARTMENT OF THE NAVY", October 29, 1965.

FISCAL YEAR 1966

Source: Bureau of Yards and Docks,
Department of the Navy.

NOA (DOLLARS IN MILLIONS)

5 YR FORC. STRUCT. & FINANCIAL PROG.								APPROPRIATION		BUREAU PROGRAM										
STRATEGIC RETALIATION FORCES 1	CONT AIR & MISSILE DEFENSE FORCES 2	GENERAL PURPOSE FORCES 3	SEALIFT AIRLIFT FORCES 4	RESERVE AND GUARD FORCES 5	RESEARCH & DEVELOPMENT 6	GENERAL SUPPORT 7	TOTAL	TITLE	TOTAL	R D T&E I	PLANNING SHORE FACILITIES II	ENGINEERING AND DESIGN III	CONSTRUCTION IV	SHORE ELECTRONICS V	MILITARY READINESS VI	REAL PROPERTY MANAGEMENT VII	FAMILY HOUSING MGT. VIII	OPERATION & MAINTENANCE IX	DIR & ADM X	TOTAL
2.4	4.9	203.7		14.4	.1	170.1	395.6	OPERATION & MAINTENANCE, NAVY	395.6	.1	2.2	3.9	4.8		19.5	2.4	1.1	350.7	10.9	395.6
						182.9	182.9	FAMILY HOUSING DEFENSE	182.9				89.0				93.9			182.9
		40.5				.7	41.2	OTHER PROCUREMENT, NAVY	41.2				.7		6.2			34.3		41.2
	.2	151.2		9.5	23.4	169.2	353.5	CONSTRUCTION-ALL MCON-MCNR-	353.5				353.5							353.5
					25.4		25.4	RESEARCH, DEVELOPMENT, TEST & EVALUATION	25.4	5.1		.3						20.0		25.4
2.4	5.1	395.4		23.9	48.9	522.9	998.6	TOTAL	998.6	5.2	2.2	4.2	448.0	0	25.7	2.4	95.0	405.0	10.9	998.6

OSD PROGRAMS BUDGET BUDOCKS PROGRAMS

25 MAR 65

FIG. 9

PART II

MEANINGS AND USES OF OPERATING COSTS

CHAPTER IV

DEFINITIONS AND BASIS FOR MEASURING OPERATING COSTS

Department of Defense Programming System

Program element operating costs are defined as those program costs necessary to operate and maintain the capability. These costs include Military Personnel, Operation and Maintenance and recurring Procurement appropriation costs (such as replenishment spares). They exclude Research, Development, Test and Evaluation; and Military Construction appropriation costs.[1]

This broad definition requires further clarification to convey the total meaning of operating costs as construed and used for the Department of Defense Five Year Force Structure and Financial Program. Annual operating costs are measured in terms of total obligational authority required to maintain the capability for one year. In a real sense, this represents the total cost of resources ordered or purchased for the use of operations during a period of one year. The resources need not—and in many cases cannot—be consumed during the period in which the costs are incurred because they may not have been received. In a like manner, the cost of some resources consumed during a given period may have been incurred during a previous fiscal period. This method of measuring operating costs has been criticized by

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[1]Department of Defense, Office of the Secretary of Defense, DOD Programming System, DOD Directive 7045.1, (February 13, 1964).

proponents for improved accounting practices in the Department of Defense.[2]

The disadvantage in using total obligational authority as a measure of operating costs is that is has questionable meaning when used to measure unit operating costs or to measure performance against a standard. Theoretically, unit operating costs should be the ratio of actual units of output divided by actual cost. Cost in this ratio represents the value of resources consumed to produce or provide the units of performance being measured. The ratio of actual unit performance over the cost of resources ordered or purchased—the ratio obtained when total obligational authority is used for the base—has questionable significance. There is little disagreement that, where operating costs are involved, expired costs or expenses represent the better method of measure. Recognizing this, Congress now requires all federal agencies to utilize accrual accounting methods wherever practicable.[3] Accrual accounting distinguishes between costs and expenses and recognizes expenses only in the accounting period when they are incurred. In the case of Navy operating costs, expenses would be recognized in the period when the resources were consumed rather than when they were ordered. To date, the Department of Defense has not fully complied with this requirement.

By definition, program element operating costs exclude all costs

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[2]Robert N. Anthony, "New Frontiers in Defense Financial Management," The Federal Accountant, (June, 1962), p. 16.

[3]U.S., Congress, Senate, Committee on Government Operations, Financial Management in the Federal Government, 87th Cong., Ist. Sess., 1961, Document No. 11, p. 191.

of facilities, equipment and machinery which are not normally consumed in their entirety during a period of one year. This follows the general practice in the federal government of not charging imputed depreciation and amortization costs to operations. Business-type budgets with asset accounting and depreciation allowances are used for certain industrial/commercial type activities in the Navy; but, even these activities do not price their products and services to recover all capital investment costs. An extension of the depreciation concept to all facets of government operations has questionable value.[4] Defense services are not priced and capital expenditures are not financed through specific capital borrowings; therefore, the necessity for determining imputed costs of operations resulting from capital acquisitions does not exist. It might have advantages in making administrators more conscious of the total cost impact of their operations,[5] but this degree of financial sophistication has not yet been introduced in the Department of Defense.

Administrative Budget

Budget requests are stated in terms of new obligational authority. This differs from total obligational authority by the amount of obligational authority "carried forward" from previous appropriation grants. This type of "carry over" authority does not exist for annual appropriations which expire at the end of each budget year.[6]

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[4] Burkhead, op. cit., p. 210.

[5] Ibid.

[6] Supra, p.18..

Navy annual operating costs are funded by annual appropriations. Since funds authorized for operating costs cannot be carried forward to the next budget year, total and new obligational authority are usually numerically equal. One exception to this equality occurs when funds are transferred out of working capital accounts to operating accounts.[7] In this case total obligational authority exceeds new obligational authority by the amount transferred. Normally, however, the cost of operations is the same in both the program and the budget dimensions.

Operating costs must be assigned to an accounting entity to have meaning. In program terms, operating costs are assigned to program elements. In budget terms, operating costs are assigned to the Navy. More specifically, operating costs are assigned to Navy programs or Navy functions.[8] This definition of operating cost represents a category of the total operating cost of the Navy—not the total distributed operating cost of the program or functional entity. For example, medical care is a function which represents a common accounting entity in both the program and budget dimension. The operating cost of this entity in program terms consists of all operating costs associated with the performance of medicare. This includes such costs as military personnel pay, facilities maintenance, vehicle maintenance, utilities, as well as the cost of medical supplies and civilian pay associated directly with medical care. In budget terms the operating cost of medical care includes only direct costs and excludes such costs as

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[7] Budget Digest, FY 1965, op. cit., p. 36.

[8] NAVPERS 10792-A, op. cit., p. 266.

[illegible]

[illegible]

[illegible]

military pay, facilities maintenance and other functional costs which are budgeted for in other Navy programs. In the program view, medical care is considered an entity. In the budget view, medical care is considered one category of Navy operating costs. When the Navy is the costing entity, there is no need to allocate various functional costs to the different cost categories or programs. In the program view, medical care is an "output" and total operating costs should be allocated to the "outputs". Thus, a major difference between these two views is the costing entity.

Management of Navy Operations

An operating unit is an organizational subdivision or entity which is responsible for the execution of a segment(s) of a Navy program or function.[9] Operating costs of Navy organizational entities are not managed entirely through operating budgets.[10] Bureau funded resources, a major part of operating costs, are managed by means of direct resource allocation or by means of allowance lists and schedules of overhaul and repair.

Operating budgets for organizational units ashore include all operating requirements except military personnel costs and a limited amount of cost for bureau furnished items; consequently, operating performance of these units can be measured in terms of operating budgets by adding statistical costs of personnel and bureau furnished items in performance reports.

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[9] Ibid., p. 270

[10] Supra., 31.

Measurement of operating performance for fleet units is more difficult for two reasons: first, a large rather than a small portion of their direct operating costs are furnished by bureaus; and second, indirect operating costs, in the forms of support and service ashore, are not charged to the operating units. As a result, operating performance is usually measured in functional or resource categories of operating costs. For example, operating performance might be measured in terms of gallons of fuel per steaming or flying hour. The cost of operating is a physical measure which can be converted to dollars. When resource consumption is used to measure operating costs, the measured cost is an expense of operations. Therefore, to the extent that the term "operating cost" has a useful meaning for fleet units, the measure of cost is expired cost for bureau furnished resources and obligations for costs managed directly by the organizational unit.

Operating performance data are reported to management via many management data systems—each designed to measure a specific category of operating performance. Some of these data systems report costs in terms of obligations and others report in terms of physical units. Those which report in terms of obligations are integrated, to some extent, with the Navy Accounting System. The others are either complimented by the Navy Accounting System or completely independent from it. In any case, the term operating cost, as used in measuring operating performance, refers to categories of operating costs associated with the organizational entity. The basis for measuring these cost categories is either obligations or expired cost of resources consumed.

CHAPTER V

OPERATING COSTS IN COST-EFFECTIVENESS ANALYSIS

The planning process places considerable reliance upon cost-effectiveness analysis for selecting the best weapon-system from alternatives and for selecting the best mix of systems to achieve desired outputs. These selections are difficult choices because a long list of reasonable alternatives can usually be developed to accomplish a given mission.[1] Each alternative is complex in itself and is often dependent on other systems already in use. On occasion, new alternatives are interdependent as well as dependent on existing systems. These facets add considerable complication to the analysis.

Decisions always involve future costs and capabilities of the systems under study. Since neither of these quantitative inputs are easy to determine with any degree of accuracy, various degrees of uncertainty exist from the very beginning of the analysis. Estimated costs, although extremely difficult to determine, may cause less difficulty at the beginning of the analysis than the criteria for effectiveness.

The effectiveness of weapons during wartime are subject to a great many factors. Their accuracy, flexibility, durability,

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[1]Ralph M. Tucker, "Cost-Effectiveness-Fact and Fancy," U.S. Naval Institute Proceedings, (September, 1964), p. 75.

reliability, mobility, and many other qualitative factors must be considered in addition to their destructive or mission capability. The difficulty in weighing these factors is that people place different values on the same factor. The "rational" solution to this "human" problem is to establish arbitrary groundrules or specifications which most nearly "satisfies" the proponents of the alternative weapon-systems. The establishment of these working specifications is the most crucial aspect of the analysis. Any bias in the specifications most surely predetermines the outcome. The inability to assign "absolute values" to effectiveness is considered the most limiting feature of quantitative analysis and has caused the most vocal criticism of this aid for making military decisions. O.M. Solandt reasons: "Where no one has any practical experience of the kind of war that may be forged in the future, the self-confident scientist is tempted to step in and make his own assumptions and simplifications. These may be realistic, but I am afraid they are too often adapted to fit his models and theory."[2] Gene H. Fisher expresses a different view of the limitation: "...long-range-planning decision problems must ultimately be resolved primarily on the basis of intuition and judgement. We suggest that the main role of analysis should be to try to sharpen this intuition and judgement."[3]

Objectively the analysis has limiting constraints on both cost

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[2]O.M. Solandt, "Concluding Remarks," Journal of the Operations Research Society of America, (November-December, 1960), p. 859.

[3]Gene H. Fisher, "The Role of Cost-Utility Analysis in Program Budgeting," Program Budgeting, ed. David Novick, (Washington: U.S. Government Printing Office, 1965), p. 39.

and effectiveness. The law of diminishing returns limits the practical cost and the law of diminishing value limits effectiveness. The first law assumes that resources are in limited supply and therefore the more of an item produced, the more costly it becomes. The second law rests on the physiological fact that the more of an item you have, the less valuable the next becomes. This applies to weapons of war as well as other commodities. Clearly then, the analyst can approach the problem in one of three ways: (1) fixed cost, (2) fixed effectiveness, or (3) a best balance between cost and effectiveness.

When cost analysis is used to select between alternatives, one factor, cost or effectiveness, must be fixed to permit analytical comparison. During peacetime, many military choices are limited by cost criteria; that is, budget limitations are given in the form of "guidelines" and program change proposals are limited to the cost of present programs which they expect to replace. Under such limitations, competing programs are more often those which do a "better" job for the same cost than those which do the "same" job for less cost. In either case, a limit must be determined by someone in authority other than the analyst. If a cost limit is selected (budget ceiling), the problem is to maximize the effectiveness which can be obtained for the fixed cost. If strategic capability (effectiveness) is predetermined, the problem is to obtain it for the minimum cost.[4] Thus, optimizing, either maximizing or minimizing, is the end purpose of the analysis.

Once the problem has been designed, estimated costs of the weapon-

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[4]Charles J. Hitch and Roland N. McKean, The Economics of Defense in the Nuclear Age, (New York: Atheneum, 1965), p. 3.

system must be determined for the input to the cost side of the problem. As mentioned in Chapter II, costs are categorized as one of three types: research and development; investment; and total operating costs over the expected life of the system. Since long term projections of cost are difficult to make with any degree of precision, costs or financial estimates are projected for only five years which gives a good approximation of full costs.[5]

How are operating costs estimated that far into the future? Usually by adjusting historical operating cost data for similar programs. More specifically, historic unit cost factors are applied to estimated units of future operating requirements. These historic costs might be considered "irrelevant" because they relate to the past; yet, they are "most relevant" because there are no better guidelines available. Consequently, operating cost estimates for future weapon-systems relay heavily on "experience" data on present systems.

The magnitude of operating costs, in comparison with research and development, and investment, varies with each weapon-system. The operating costs may exceed the sum of the other two.[6] Secretary of Defense McNamara has expressed concern over the gross inaccuracy of estimates on weapon-systems and has stressed the necessity for more reliable cost figures.[7] A weapon-system, selected on the basis of a

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[5]U.S., Congress, House, Subcommittee of the Committee on Appropriations, Hearings, Department of Defense Appropriations for 1963, 87th Cong., 2nd Sess., 1962, p. 3.

[6]David Novick, System and Total Force Cost Analysis, (Santa Monica: The Rand Corp., 1961), p. 2.

[7]Ibid., p. 37.

cost-effectiveness analysis, may well be the wrong selection if the estimates are too far out of line. Further, since the validity of operating cost data cannot be ascertained until after the system is selected and placed in operation, careful and accurate estimating is a major concern during the planning and programming phase.

Cost-effectiveness analysis contains many uncertainties in varying degrees. Uncertain or inaccurate cost estimates are but one of the many errors introduced into the analysis and they often are the least erroneous of the factors used.[8] The effect of uncertainties can be evaluated in comparison problems by conducting sensitivity tests. These tests vary input factors such as cost estimates and change criteria assumptions to determine the effect which they have on the results.[9] If the problem is sensitive to certain estimates or assumptions, a change in these factors usually changes the order of preference of the systems under comparison. These tests help to substantiate a preferred system when changes in the estimates or assumptions do not change the order of preference.

On rare occasions, the cost-effectiveness ratios of two or more systems are nearly the same. In these cases the sensitivity tests are of limited value because when cost estimates are varied up or down the preference order changes with the estimates. Accurate estimates of both the cost and the effectiveness are then the key factors in the

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[8]G.H. Fisher, "The Problem of Uncertainty," Concepts and Procedures of Cost Analysis, ed. J.P. Large, (Santa Monica: The Rand Corp., 1963), p. VI-4.

[9]Ibid., p. VI-24.

final decision.[10] It might appear that when competing systems have nearly equal cost-effectiveness ratios the system with the underestimated costs would have an advantage in the selection process. It will be seen in the next chapter that this is not the way to "beat the system".

Most of the discussion to this point has been concerned with selecting from new systems. In many cases, new systems replace existing systems or some part thereof. Under these conditions, the analysis compares the existing system as one possible choice. The analysis changes only in the fact that the present system's future estimated costs include only the operating costs. The sunk costs of the present system are not relevant to the comparison because they cannot be recovered under any conditions of the outcome.[11] The new proposal must be considerably better than the existing system in order to overcome the added burden of investment costs.

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[10]Tucker, loc. cit., p. 78.

[11]Charles T. Horngren, Accounting for Management Control: An Introduction (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1965), p. 324.

CHAPTER VI

OPERATING COSTS IN PROGRAMMING

Programming might be considered as step two of planning. It involves the more detailed steps required to eventually implement the decisions made during the planning phase. At this point, objectives have been established and courses of action to meet these objectives have been selected. Programming must integrate the approved courses of action into the overall defense program.

Strategic objectives and cost-effectiveness factors used in planning gives way to timing and resource limitation factors in programming. Time-phased cost requirements for the various programs are significant determinates of how much and how fast new or changed programs can be introduced into the overall financial structure.[1] New programs cannot be injected into the system without consideration of overall financial limitations. A fixed limitation does not exist but the general economic and world situation certainly sets the framework for overall spending policies established by the President. Prior to the Vietnam crisis, it was evident that a rather level spending policy had been established for defense at somewhere around fifty billion dollars per year. The overall impact of new program decisions are determined during the planning phase but detailed adjustments must be

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[1]J.P. Large (ed.), Concepts and Procedures of Cost Analysis (Santa Monica: The Rand Corp., 1963), p. I-5.

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programmed periodicly to keep the Five Year Force Structure in step with the actual funds granted yearly by Congress.

Since program elements are the building blocks of the Force Structure, they must each have a time-phased financial plan which reflects the estimated total obligation authority required on an annual basis for five future years. Annual increments are the necessary base for estimation and control purposes because funds are budgeted on an annual basis.

Program changes often involve the replacement of components of existing program elements. In such cases, the replaced components cannot be phased out until their replacements are operational. To do otherwise would upset the balance of forces in the Force Structure. Consequently, physical progress of new program components under development are a key factor in determining when old components can be phased out. Manpower resources from an old component are sometimes planned for a new component other than the one which is replacing the old. Under these circumstances, critical interrelations are established between what otherwise might be independent program changes. Thus, constant reprogramming is necessary to keep within financial and resource limitations.

The magnitude of the financial complexities of programming are almost incomprehensible and certainly would be unmanageable if it were not for automatic data processing. Needless to say, the problem reaches near impossible proportions when cost estimates for program elements are found to be completely erroneous. For any given force level and

activity rate, operating costs are fixed over relatively short intervals of time. It must be assumed that operating levels are fixed at some predesignated position for each program element in order to arrive at an estimated operating cost for a period of one year. There is a definite relationship between the operating costs and force levels as well as between operating costs and levels of operation of these forces. The problem is the determination of these relationships. Certain costs included in the definition of operating costs do not vary with either forces or level of operations. For example, the removal of a squadron of aircraft from an Air Station would not necessarily be accompanied by a corresponding reduction in the size or the cost of maintaining the remaining facilities. Therefore, the total operating cost of the station might well not change with this change in force level. In a like manner, a change in the operating rate of the squadrons would probably not result in a change in the operating cost of the station.

If accurate operating cost data are available from several previous years, cost relationships of and between variable can often be established by building cost models.[2] These models can be developed by using one of many statistical techniques. These techniques develop normal cost equations based on historic data which relate total costs to the variables which effect total cost. These mathematical models have several serious limitations. First, the variables can seldom be isolated from other variables to determine their individual impact on

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[2]R. L. Petruschell, "An Introduction To Estimating Relationships," Concepts and Procedures of Cost Analysis, ed. J.P. Large (Santa Monica: The Rand Corp., 1963), p. IV-1.

total costs. Second, the variables are often interrelated. This greatly complicates the problem because it necessitates establishing other models which relate these variables. As a result, a whole family of models are often required to obtain any reasonable prediction of the dependent variable.[3] In the case of program elements, the numbers of forces as well as the activity rate of these forces or their attendent weapon-systems effect total operating costs. Therefore, rather specific relationships between the variables which effect total operating costs have to be developed before cost models can be used to predict costs.

Notwithstanding the above difficulties, cost models can be very useful for the degree of accuracy required in many planning problems. Reliable statistical data on operating costs are required to use this tool of management.

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[3] William J. Baumol, Economic Theory and Operations Analysis (Englewood Cliffs: Prentice-Hall, Inc., 1965), p. 221.

CHAPTER VII

OPERATING COSTS IN BUDGET PREPARATION AND REVIEW

Conceptually, program decisions made by the Secretary of Defense in the programming process are budget decisions. Approval of the Five Year Force Structure and Financial Program and changes thereto are committments to support a budget request for the necessary funds to maintain the programs. In this respect, the budget merely represents a perspective from an appropriation and budget activity point of view. The programs which the budget encompasses have already been approved and their total financial requirements are known through the updated version of the Five Year Force Structure and Financial Program.[1]

The budget appears to be a one year "slice" out of the Five Year Program. In practice it is not that simple. The budget sent to Congress must fit into the latest financial ceiling determined by the President and his staff. In addition, the budget must "fit" the format in which the Congress wants to perform reviews. Many of the "rules of thumb" used by Congressional staff members during the budget review have no counterpart meaning in the program structure and vice versa. Consequently, budget requests must be adjusted and formulated so as to withstand the scrutiny of the reviewers. Appropriations are often based on past performance rather than future expectations.

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[1]Department of the Navy, Office of the Comptroller, Program Change Control System, NAVEXOS P-2416 (August, 1962), p. 3-1.

Annual budgets are prepared essentially in the same manner as before the adoption of the Department of Defense programming system.[2] Operating requirements are prepared on the bases of anticipated activity for the budget year. Financial requirements are supported on the basis of functional performance standards such as flying hours, steaming hours, workload data, vehicle miles, and various other standards that have been developed over many years from the various management systems. Operating budget submissions received from field organizational units are not identified with the program elements to which they are assigned. The bureaus and offices merge field budget requirements with their own and development Navy program requirements along budget project lines. Last year's budget plus or minus approved program changes is often the basis for the new budget. Variances from the last budget are given careful review and justification is prepared to explain any increases or decreases. Specific attention is given to those "rules of thumb" which have been used in past budget reviews at the various review levels. Operating budgets are not prepared in terms of program element operating costs. Rather, after the budget is prepared, it is "allocated" to program elements based on a predetermined and "consistent" allocation procedure. To the extent that budget amounts can be related to specific program elements, they are directly allocated. In those cases where direct identification is not possible, budget project amounts are allocated on a "rational" and "auditable" basis. A primary concern during allocation is that the amounts allocated do not exceed the amounts allowed in the Five Year Force Structure and Financial Program. Since the estimates in the financial plan are

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[2] NAVPERS 10792-A, op. cit., p. 61.

updated by allocating the budget year estimate, the variation from year to year should be accounted for by approved changes or adjustments made during the previous year.

The primary controlling feature of the Five Year Force Structure and Financial Program, as it concerns operating budgets, is the numerical force figures it contains. Force decisions provide the base for operating budget preparation—not the dollars estimates contained in the approved financial plan. That is, operating budget requests are justified on the basis of performance factors regardless of the approved estimates in the financial plan. Consequently, program element operating cost estimates in the financial plan are not of major import during budget preparation as long as total Navy operating costs do not exceed the sum of the operating cost estimates in the financial plan.

Budget reviews by the Secretary of Defense and the Bureau of Budget are normally held concurrently. These reviews are in budget category format not in program format. Budget decisions made by the Secretary of Defense—in budget format—are "injected" into the Five Year Force Structure and Financial Program.[3] This indicates that program decisions are <u>not</u> always budget decisions.

The Congress, although interested in the program approach to budgeting and budget analysis, has indicated that it has no intention of changing its present method of reviewing and approving budgets in

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[3]Department of the Navy, Office of the Chief of Naval Operations, <u>The Navy Programming Manual</u>, Part I, OPNAV 90-P-1, (September, 1964), p. I-5-5.

terms of budget projects and other appropriation groupings.[4] This being the case, operating costs grouped in budget categories will remain a significant part of the budget process.

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[4]NAVEXOS P-2416, op. cit., p. 2-12.

CHAPTER VIII

OPERATING COSTS AND PROGRAM CONTROL

> Programming is concerned with policy objectives, long-range projections, and analysis methods that go far beyond the scope of traditional budget procedures. Programming, however, may remain merely a useful academic exercise unless it is implemented through the budget, which should provide an essential link between policy and administration. Finally, both programming and budgeting depend in essential ways on the information that can be obtained only through perceptive reviews of past performance.[1]

Arthur Smithies, a recognized authority on the subject of program budgeting, envisions programming as a budgetary control device, not just a process which gives scope and direction to budget policy and plans. This may appear to be a moot point but it has significant implications on the manner in which the programming concept is used. If it is used only to give general direction and scope to future budgets, it implies rather broad control over administrative budgets. In this manner, it might be comparable to the type of policy direction often given by a Board of Directors of a large firm—broad policy direction. Programming used in this manner envisions decentralized budget planning within broad guidelines established by top management. If on the other hand it is used as a detailed planning device to accomplish specific objectives within specific time frames, it implies rigid control over budgetary planning.

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[1]Arthur Smithies, "Conceptual Framework for the Program Budget," Program Budgeting, ed. David Novick, (Washington: U.S. Government Printing Office, 1965), p. 32.

When the programming system was first introduced in the Department of Defense, it was presented as a tool for making broad military decisions. In 1962, Hugh McCullough, then Deputy Assistant Secretary of Defense (Programming) stated:

> There seems to be some apprehension that the system of reporting obligations and expenditures will have to become much more complex in order to satisfy the requirements of both structures. Nothing of this nature is intended; on the contrary, it is hoped that some of the reporting now going on can be eliminated. The essential point to remember is that programming does not require financial preciseness. Reasonable statistical approximations are quite adequate for the purpose and these conceivably could be provided with relatively little difficulty.[2]

This statement indicates that programming would not be linked directly with budget reporting—or at least that it would not require the preciseness of budget reporting. It implies that programming is a process somewhat similar to the capital budgeting process in industry. This implication is drawn from the statistical nature of the financial data requirements. Budgeting may not require financial preciseness but progress against budget plans during the execution phase is usually measured in rather precise terms—not statistical approximations. The requirements indicated above seem to fit the description of the broad policy form of programming.

Several years after the adoption of the programming system, the former Assistant Secretary of Defense(Comptroller), spoke on the subject of financial data a follows: "The other less-than-satisfactory aspect of the programming system is our machinery for measuring and

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[2]Hugh McCullough, "New Concepts in Defense Planning, Programming and Budgeting," The Federal Accountant, XII, (September, 1962), p. 81.

estimating cost."[3] [Italics added.]

The difference between "statistical approximation" and "measuring" is subject to debate, however, the fact that dollar amounts authorized by the Secretary of Defense for individual program elements cannot be exceeded indicates that "measure" means rather accurate measure--at least as accurate as that required for budget management. It is reasonable to assume that the Department of Defense programming system has been designed as a rigid control system.

The essential elements of a control system are: (1) Predetermined goals; (2) A means of measuring activity; (3) A means of comparing activity with goals; and (4) Corrective action.[4]

The Department of Defense programming process determines goals in two forms: (1) In terms of forces, that is, manpower, weapons, and facilities; and (2) In terms of dollars, the common denominator of all the resources which make up the forces. As discussed earlier, an inherent difficulty in setting goals in terms of numbers is that military worth is seldom measurable in terms of numbers alone. Other factors such as intensity of training, material condition and morale of personnel also determine the quality and value of military output. With the exception of unmanned weapon-systems, unqualified goals are difficult to establish because of these qualitative factors. As a result, dollar approximations of the cost required to obtain an

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[3]Charles J. Hitch, Decision-Making for Defense (Berkeley: University of California Press, 1965), p. 64.

[4]Joseph L. Massie, Essentials of Management (Englewood: Prentice-Hall, Inc., 1964), p. 65.

"acceptable" degree of readiness in the past are often used as dollar goals. For example, the value of experienced personnel cannot be measured directly but the cost of retaining an acceptable level of experience can be expressed in dollar terms based on past experience. Consequently, the force structure, even though expressed in numbers, must be married to a financial program which gives it definitive size. In theory, the two plans, force structure and financial program, represent an equality at any point in time.

Using the above equality in a program element, the total operating cost for one year should represent a specific bill of materials which includes manpower requirements, fuel, spare parts and all the other resources needed to operate the weapons in the element for one year. Due to the size and complexity of program elements, central control over specific resources is not practicable. Therefore, if the Secretary of Defense is to exercise control over operating costs of program elements, it is generally far more practical to do it with dollars than with specific resource lists.

The Department of Defense programming system supposedly exerts some control over program operating costs. If the cost of any program exceeds certain monetary thresholds, program change proposals must be processed to the Secretary for approval. In the case of operating costs, these threshold limitations apply to single year costs as well as to lifetime costs of program elements. This type of control implies that a procedure exists to determine the annual costs, on a reasonable basis, and that some type of progress report is prepared which portrays actual versus estimated operating costs of program elements. Such is

not the case. Progress reports are required for manpower levels, force levels, major procurement, and for construction line items, but not for operating costs.[5] The Secretary of Defense receives "feedback" reports on operating costs, in terms of program elements, only at the time the Financial Program is updated to reflect the latest approved budget. This is "before the fact" information "allocated" to program elements on a "rational basis". Actual program element operating costs are not now compared with estimated operating costs.

This lack of acceptable feedback information on program element operating costs indicates a serious weakness in the programming system. If this system is to be other than an "academic exercise", actual cost data are necessary to compare progress with planned program objectives. These objectives are stated in dollar equivalents in the Financial Plan. Program objectives for weapon-systems "in being" are stated in terms of operating costs in the Financial Plan. Consequently, actual program element operating costs must be compared with estimated costs to measure goal achievement. In the words of Secretary McNamara:

> The effective management of approved programs also requires a reporting system that keeps top officials constantly informed of the progress being made in achieving established objectives—in both physical and financial terms on the basis of program entities and not merely in terms of bits and pieces of programs financed in various appropriation accounts.[6]

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[5]Department of Defense, Office of the Secretary of Defense, DOD Programming System, DOD Directive 7045.1, (February 13, 1964).

[6]"Annual Report of the Secretary of Defense, July 1,1960 to June 30, 1961, "Department of Defense, Annual Report for Fiscal Year 1961 (Washington: U.S. Government Printing Office, 1962), p. 27.

PART III

IDENTIFYING OPERATING COSTS

CHAPTER IX

NAVY ACCOUNTING SYSTEM[1]

Introduction

Navy accounting serves three broad purposes: (1) to report on use and status of funds to the Bureau or Office responsible for the appropriation or subhead from which the funds were granted; (2) to assist in controlling commitments, obligations, and expenditures in order not to exceed the limitations imposed by appropriations and subdivisions there of pursuant to Section 3679 of the Revised Statutes, as amended, (31USC 665);[2] and (3) to provide functional cost analysis data for determining efficiency of operations or other analysis required by management officials.

The accounting system can be thought of as being composed of two separate but integrated systems. An appropriations accounting system provides the fiscal accounting and a cost accounting system provides the managerial accounting. These systems are integrated to the extent that single source documents placed into the system at the field level often serves both systems. Some source documents are placed into the cost accounting system which do not enter the appropriation system and vice versa. Field activities insert documents for "statistical charges"

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[1]Much of the information for this chapter was obtained from the Navy Comptroller Manual.

[2]Commonly known as the Antideficiency Act.

which represent costs of resources used at the field level which have already been paid for by the various management bureaus. Strict accountability for statistical changes usually is not enforced management reports do not warrant that degree of accuracy. As a result, the appropriation fund accounting is considered the official accounting system.

Appropriation Accounting

The Navy receives funds from Congress in six broad appropriations: (1) Military Personnel; (2) Operations and Maintenance; (3) Procurement; (4) Research, Development, Test and Evaluation; (5) Military Contruction; and (6) Revolving and Management Funds.[3]

The appropriations are subdivided to limit their respective use. For example, Military Personnel is subdivided into four major divisions: (1) Military Personnel, Navy; (2) Military Personnel, Marine Corps; (3) Reserve Personnel, Navy; and (4) Reserve Personnel, Marine Corps.

These major divisions are further subdivided into major activities which more specifically identifies the purpose of the funds. For example, Military Personnel, Navy is separated into four major activities: (1) Pay and Allowances; (2) Subsistence in Kind; (3) Permanent Change of Station Travel; and (4) Other Military Personnel Costs.

Many of the appropriations are further divided into various subheads, projects, and budget activities to provide greater identification

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[3]Department of the Navy, Office of the Comptroller, Budget Digest, NAVSO P-1355, (November 30, 1965), p. 42.

of the specific purpose or function for which the funds are to be used. Unless Congress specifies otherwise in the Appropriation Act, a limited degree of flexibility is granted to the Administration to transfer funds between appropriations. Likewise, a degree of flexibility exists between the various subdivisions unless specified otherwise in the law. Congress must be informed of any sizeable reprogramming.[4]

These subdivisions serve a useful function other than identification. Each, bureau, office or project manager has specific accountability for one or more subheads. In most cases, a single bureau is accountable for at least one major activity of an appropriation.

All operating costs of the Navy are funded in three appropriations. Two of these; Operations and Maintenance, Navy; and Military Personnel, Navy; are considered operating expense appropriations in their entirety. In addition, some operating costs are funded by the appropriation, Other Procurement Navy.

Military Personnel, Navy

The Bureau of Naval Personnel administers these funds centrally from Washington, that is, they are not allocated to other levels of organization. All payments for these costs are charged to open allotments held by the bureau. Accountability is maintained through a system of subsidiary pay and allowance accounts maintained for each person receiving pay. Disbursement is made through accountable officers who maintain open-end drawing accounts against the Treasury. Payments

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[4]Ibid., p. 36.

made to Navy personnel are reimbursed by the Bureau's funds designated for this purpose. It is important to note that dollar payroll accounts are maintained for individuals and not for Navy organizational units. The organizational unit to which an individual is attached to at the time of payment is not carried forward to the accounts in Washington.

Operations and Maintenance, Navy

This particular appropriation is parcelled out to nearly every bureau and office in the Navy. It provides the funds to purchase all resources required to operate and maintain the Navy except Military Personnel and a few items procured from Other Procurement, Navy.[5]

In chapter II it was seen that the functions of the bureaus and offices of the Navy extend horizontally across the organizational structure of both the operating forces and the shore activities. Generally speaking, the bureaus prepare the budgets and allocate the funds to fulfill their functional responsibilities. For example, the Bureau of Ships prepares the budget for operating and maintaining all Navy ships regardless of where these ships are located or assigned. Likewise, the Bureau of Yards and Docks prepares the budget and administers the funds for all the maintenance of facilities, utilities and transportation regardless of location or organizational attachment. As a result, every organizational activity is funded through at least two and in most cases more than bureau allotments. In addition, every unit consumes resources which are funded directly by at least one bureau.

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[5]Department of the Navy, Office of the Comptroller, Budget Digest, NAVSO P-1355, (November, 1965), p. 55.

Direct funding and management of operating resources by bureaus take many forms. Examples of bureau managed functions or resources are ship and aircraft fuel, ship and aircraft overhaul, forms and publications, training films, transportation of things, ordnance and ammunition, control of specialized parts and electronics and personnel. Central planning and control of these items are more economical than organizational unit control. The difficulty with the central fund management is that the cost of the resources are charged to appropriation accounts at the time of purchase and the organizational units which will eventually consume the resources are not identified at the time of purchase. As a result, operating costs in the budget dimension are incurred without knowledge of the organizational unit which requires the cost. Final consumption of these resources is often identified by means of the statistical cost accounting system or one of the Navy management systems but these systems are not synchronized with the official financial accounting and reporting system.

Statistical source documents, representing consumption of bureau managed resources, are inserted into the cost accounting system long after the resources are purchased. Consequently, the cost accounting system cannot be used to identify operating costs on a basis which is consistent with the official obligation and expenditure accounts. Further, the cost accounting system cannot be used to identify costs of program elements because these costs are also required on an obligational basis.

The bureaus do not centrally manage all the funds they receive

for their respective functional responsibilities. Large portions are alloted to field activities, ships, squadrons and headquarters for local administration. These alloted funds generally provide for the pay of civilian labor and the cost of all resources consumed except those which are furnished by the bureaus. The source documents for these costs are placed into both the appropriation and cost accounting systems when the funds are obligated. For all practical purposes, obligations and expenses are synonomous at this level of organization. These costs can be identified to activities through the appropriation accounting system because each activity has a separate allotment.

Other Procurement, Navy

This account is received primarily for "capital-type" purchases but some operating cost items are procured with these funds because they have long procurement lead times. Examples of such items are ammunition, specialized spare parts and major equipment components.[6] They are operating costs in the sense that they are used to maintain weapons in a state of readiness. The consumption of these resources is controlled in the same manner as other bureau managed items. As in the other case, organizational units are not identified at the time of purchase.

Summary

The Navy Accounting System is really two separate accounting systems. The official appropriation accounting system accounts for

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[6] Ibid., p. 65

costs when they are obligated irrespective of when they are actually consumed. It identifies the consuming activity only when the funds have been alloted to them for administration. A large portion of the Navy's total operating costs are managed directly by bureaus. These costs are not identified to organizational units at the time of purchase.

The cost accounting system is designed to meet the needs of management for purposes other than fiscal control. It collects costs by organizational unit when the resources are consumed regardless of the time of purchase. Bureau managed resources are costed to organizational units by means of statistical source documents inserted into the cost accounting system at the time of resource consumption.

These two accounting systems are never in complete agreement because they account for resources at different times. The appropriation system accounts for resources when they are purchased or ordered. The cost accounting system accounts for resources when they are consumed.

CHAPTER X

NAVY COST INFORMATION SYSTEM

Introduction

The Navy Cost Information System is a financial management system designed to relate manpower, material, equipment and their respective costs to major missions and weapon-system for management decision-making.[1]

This system was developed to "bridge the gap" between the Department of Defense programming system and the Navy budget structure and its related accounting system. Thus, it was designed to be an integrated financial information system interrelating planning, programming, budgeting and appraisal which would provide management with the necessary information for decision-making. Primary objectives of the system were:[2]

a. Portray Naval and Marine Corps forces and their associated cost by Department of Defense program element and appropriation structure.

b. Provide data for program and financial analysis.

c. Relate program decisions to the budget structure.

d. Provide cost values that are common to both programming and

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[1]Department of the Navy, Office of the Comptroller, Navy Cost Information System, NAVSO P-2412, (July, 1965), p. 1.

[2]Ibid., p. 1-3.

budgeting in order to allow direct translation from one to the other.

e. Provide data for cost-effectiveness studies.

f. Identify the cost of a specified force.

The most difficult task of the Navy Cost Information System is to translate Force Structure and Financial Program data to and from the appropriation account and budget structure. This translation is essential if program plans are to be integrated in the annual administrative budget.

Unit Identifiers

Automatic data processors can take the drudgery out of any translation problem as long as the input and output data have common identifiable cost units. The term "unit identifier" is used to denote common units for which costs can be collected and identified in both the programming and appropriation system.

The Five Year Force Structure groups organizational units performing similar major missions into program elements. A single fleet unit, such as a ship or a squadron of aircraft is assigned to only one program element. Therefore, a single fleet unit represents the highest echelon in the Navy organization which is commonly identifiable in both dimensions. However, the total operating costs of these units are not readily identified by the Navy Accounting System. Only a part of an organization's operating costs can be directly identified in the appropriation dimension. The cost of resources furnished by the bureaus cannot be directly identified to the using organization. Specifically, the Navy Accounting System identifies the organization

which is accountable for the obligation—not the organization which consumes the resources purchased by the obligation. As a result, costs charged to organizational units only reflect those for which they hold accountable allotments. Thus, actual operating costs of program elements cannot be directly identified by the Navy Cost Information System because a common entity for costing does not exist between the two systems which it attempts to "bridge".

Even though direct translation is not possible for individual organizational units, the bureaus have accounts in the appropriation accounting system which identify the cost of various resources in categories which can be closely associated with program elements. For example, an account might collect all the fuel cost for a specific "class" or type of ship. Another account might collect all the costs for overhauling a particular type of aircraft. These accounts are useful for associating operating costs because in most cases all aircraft of a single type or all ships of a single class are assigned to a single program element. When this is the case, all the costs collected against one of these accounts can be assigned directly to the program element.

Other accounts collect costs for resources which are not all consumed by a single element but which can be identified to groups of elements. In these cases the costs in the account can be allocated or prorated to the several elements on the basis of the number of consuming units assigned. For example, personnel costs can be prorated to elements on the basis of the number of personnel assigned in the Force Structure. An average annual cost of officers and enlisted men is used to facilitate this type of allocation. Since every military person

is assigned to only one program element, total allocation of all military personnel costs can be distributed among the program elements.

There are many categories of operating costs which cannot be prorated to program elements on any rational basis. Some of these costs can be identified to a major program and others cannot be identified to any specific program. These costs are assigned to separate program elements within the major program which they serve. In all cases where these functions cannot be associated with a major program, they are assigned to functional program elements in major program number VII. Program VII, General Support, is commonly referred to as the "catch all" program because all unallocated costs are accounted for in this program. Examples of these might be Navy Wide Communications, Navy Intelligence, Individual Training, Family Housing, Medical Services, Servicewide Supply, Departmental Expenses and Navy Industrial Fund Expenses. These are not necessarily overhead costs. Rather, they are costs which cannot be allocated to programs or elements on a reasonable basis.

It is quite apparent that operating costs which have to be prorated are at best "first approximations" of the true operating costs obligated for program elements. They represent average figures which do not reflect the intensity of activity of the organizational units assigned to different elements. Further, they do not represent trends in costs which might be due to differences in material condition or operating efficiences of the different elements.

The inadequacy of these cost estimates is shown by a problem

which occured in 1964. The Secretary called for an addendum budget to incorporate all outstanding program change proposals even though they had not yet been approved. Cost estimates for change proposals are made in the same manner as estimates for program elements, that is, on the basis of average costs allocated to specific programs. Consequently, the addendum budget, based on program change estimates, did not represent realistic financial requirements. In this case, budget decisions were going to be made in terms of the specific program change proposals. Adjustments were required as follows:

> The FY 1964 Addendum Budget was submitted to the Secretary of Defense on October 1, 1962. Shortly thereafter, an amendment was submitted which revised the costing of the military personnel from that used in the program change proposals to that required for adjusting the Basic Budget which was costed in the traditional manner. Hence, the year-end numbers were converted to average numbers and the per capita rates were replaced by actual or average rates for specific items of entitlement (basic pay, etc.) for officers and enlisted by grade. It was necessary to recost each program change proposal separately so that, upon approval by the Secretary of Defense, the effect of each on the Basic Budget could be determined.[3]

The above example clearly illustrates the inadequacy of the cost estimates in the Financial Program. They are "representative" of operating costs but not sufficiently representative to be used as a base for budgeting.

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[3]Department of the Navy, Office of the Comptroller, Budget Digest, NAVEXOS P-1355, (October 30, 1964), p. 28.

PART IV

SUMMARY AND CONCLUSIONS

CHAPTER XI

SUMMARY

Navy financial management is faced with a three dimensional problem. The Secretary of Defense makes financial decisions in terms of programs and program elements. Congress makes decisions in terms of appropriations and their subheads. Finally, these decisions are executed through a formal organization which embraces an entangled financial interrelationship among operating forces, bureaus and offices. The word entangled is used because financial responsibility generally does not follow the organizational chain of command. Each face of this three-sided problem represents a detailed and somewhat independent financial management sub-system.

The Secretary of Defense makes major decisions with the assistance of the Department of Defense Programming system in which each military force and function in the Department is grouped into one of several hundred mission elements. Each element represents a specific type of defense output. Navy forces and functions are grouped into approximately three hundred fifty different program elements. The grouping of organizational units into these program elements is almost completely dissimilar to their grouping in the formal Navy organization.

Congress makes financial decisions for the Navy at least one time

a year when they approve the administrative budget. This budget is presented to Congress in terms of programs by the Secretary of Defense but it is reviewed and approved in terms of appropriations and subheads. These subheads represent approved funds for specific "purposes" or functions. Here again, the subdivisions of the appropriations do not completely coincide with the formal organization of the Navy. However, they do follow the bureau level of financial responsibility.

Congressional financial decisions prevail; therefore, budgets approved by Congress must be translated into Department of Defense program decisions. The Navy Cost Information System is designed to translate budget decisions from budget language to program element language. Thus, it is the system through which financial decisions are transmitted to the Navy for execution and through which program progress data should flow back to the Secretary of Defense. If the Department of Defense Programming system influences operating costs of program elements, this influence must be exerted through the Navy Cost Information System because the Navy executes its programs in budget language.

The Navy executes financial plans through two broad financial management systems. One system is used for fiscal control and the other for management of resources. The latter system consists of many sub-systems each designed to manage specific resources or functions. These sub-systems represent the foundation of Navy operating management. They are the most widely used at both field and bureau level because they measure the performance of management and determine the allocation of funds to various organizational units.

The fiscal control system is the vehicle through which funds are alloted and controlled. It compliments the various management systems but fiscal reporting does not measure operating performance. Consequently, the annual administrative operating budget, which in total limits the operating fund allocations through the fiscal control system, is more often used as a vehicle for obtaining funds than as a detailed financial plan. The apparent "misuse" of the budget has drawn a great deal of criticism from scholars and businessmen; however, it must be remembered that the budget is formulated many months before it is executed. The management systems, on the other hand, are current in comparison and provide the timely response required to effectively manage resources on a day-to-day basis. These systems identify problems which arise long after the budget is formulated. No doubt closer adherence to the annual operating budget would draw more criticism than relegating it to its present status an an "upper limit" financial plan.

The Navy management systems and the appropriation system for fiscal control are complimentary in the manner in which they are used. Obligation authority is authorized in terms of budget projects which limit bureau programs. Within these limitations, bureaus manage their programs and allocate funds to field organizations in a manner which best serves current needs. Organizational operating budgets must in turn be developed on the basis of the amounts of operating funds authorized by the bureaus. Therefore, field organizations do not always view allotments of funds as budgets. Rather, they are viewed as monetary limitations into which operating budgets must be "squeezed".

In those cases where the funds are not alloted to field activities or fleet units, management of resources is often performed in units other than dollars. For example, personnel are managed in terms of numbers rather than dollars. Consequently, the exact interrelation which exists between the Navy management systems operating plans and the fiscal control system financial plan is difficult to establish except in terms of broad, total dollar "envelopes".

The Department of Defense programming system, among other things, envisions a direct link between program decisions and operating budgets. A program decision which reduces the activity of a program should be reflected in the operating budgets of the units associated with that program. The fulfillment of this requires a direct financial link between the program structure and the operating budget structure of the units and activities associated with the program elements. The Navy Cost Information System is used to establish this link but the link is weak in several respects. These weaknesses are discussed in the next chapter.

CHAPTER XII

CONCLUSIONS

Government budgeting is a process by which the use of resources is planned and controlled.[1] Resources are used to acquire new facilities and to operate those facilities already in use. As a result, a major financial planning decision in the budget process is the choice between these two possible end-uses of resources, that is, the choice between capital expenditures and operations. This decision must be integrated with program decisions—decisions which express policy objectives of the resource allocations. The necessity of this integration in military budgeting is especially important because program objectives, expressed in terms of military outputs, are often in fact only expressed in dollar terms. That is, military output is often a direct function of resources allocated for operations.

Capital acquisitions of weapon-systems do not in themselves achieve military output objectives. These objectives are achieved only through operations of the weapon-systems. A weapon-system has little, if any, military value until it is operational and until it has been allocated operating resources which permit it to "produce" military benefit. Therefore, program decisions made by the Secretary of Defense, which allocate present and future resources to operations, are potentially as significant to the ultimate military output as the decision which

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[1]Burkhead, op. cit., p. vii.

chooses the "best" weapon-system because the operating resource allocation, in fact, limits the potential military output of the weapon-system.

In the Department of Defense programming process, the above two decisions are made concurrently. Lifetime operating costs are approved as a part of the decision-making process. Thus, the potential military output of the weapon-system is determined in two respects. First, the amount of resources approved for procuring the weapon-system determine the size; and second, the amount of resources allocated for operations determine the military benefit which can be derived from the weapon-system because operating cost allocations, in essence, establish "quantified" military output objectives.

When the Navy accepts a program decision made on the basis of a cost-effectiveness analysis which stipulates future operating costs, a tacit "agreement" is made with the Secretary of Defense which implies that a given military output(effectiveness) can be achieved with the operating funds and physical resources "pre-allocated" in the Five Year Force Structure and Financial Plan. However, this agreement is not firm until budget time when the Secretary of Defense in effect establishes "new" output objectives by approving operating requests in the Navy's proposed budget. These new objectives apply to the output of the Navy, not to the output of separate program elements. That is, they are applicable to the Navy as a whole, an entity not singularly identifiable in program terms. Consequently, program element objectives, stated in terms of program element operating costs, are merged into Navy objectives, stated in terms of appropriations and

budget projects. From this point in the budget cycle, Navy operating funds are managed in terms which are completely independent from program elements.

Theoretically, the sum of all Navy program element objectives should equal the Navy objective, that is, the whole should equal the sum of its parts. To the extent that the sum does equal the whole, the Department of Defense programming system is integrated with the financial management of Navy operating funds. Is the purpose of the programming process the allocation of operating funds to the entity Navy? The stated purpose of this process is to manage military outputs in terms other than service entities. This being the case, how can these military outputs be managed if their identity is lost during program (budget) execution? How can these military outputs be managed if the cost of their operations cannot be reported on a periodic and reasonably accurate basis? If program element decisions are to be meaningful, operating budgets of organizational units assigned to specific program elements must reflect program element decisions and vice versa, operating decisions made in terms of specific weapon-systems should be reflected accurately in terms of program element costs.

The Navy Cost Information System attempts to translate financial data between the program element dimension and the budget dimension. Information gathered for this study reveals that this translation only "associates" costs between the two dimensions. Direct translation of operating costs is not possible because common accounting and costing entities do not exist in both dimensions which permit data to be

identified and interchanged. The accounting entities in the budget dimension are budget projects. These are "functional" or "bureau project" accounts which represent segments of Navy operating costs. The accounting entities in the programming system are program elements. Program elements generally represent groupings of organizational units but exceptions to this exist in the case of program elements in major program VII, General Support. These program elements represent "functional" groupings such as medical care and service-wide supply operations. Consequently, organizational operating costs are not all included in the cost of the program element to which the organization is assigned. That is, some functional costs must be deducted from an organization's operating cost and placed in other program elements. This proliferation of operating costs between program elements evidently reflects an attempt to align program elements with budget projects found in the administrative budget. In so doing, a large amount of operating cost has been "lodged" in program elements which have no assigned military output. In fiscal year 1965, 3.06 billion dollars or twenty percent of the entire Navy budget was allocated to major program VII--the program without military missions.[1]

The purpose of this study is to examine the differences which exist among the three views of Navy operating costs, that is, the view expressed in budget terms, the view expressed in program terms, and the view expressed in organizational terms. These differences prohibit integration of financial information in the Navy.

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[2]Budget Digest, Fiscal Year 1965, op. cit., p. 36.

The first, and perhaps the most important difference, is the manner in which operating costs are grouped, that is, the costing entities. The administrative budget groups costs in terms of resource inputs such as personnel, fuel, facility maintenance and utilities. These budget projects are decision and accounting entities during the entire budgeting process. The Department of Defense groups costs in different terms—program elements. These represent decision-making and accounting entities during the entire planning and programming process. Last, the Navy manages operating resources in terms of organizational entities. Organizational units are decision-making entities for operations but not always accounting entities for the management of resources. The organizational units convert resource inputs into military outputs. This conversion is managed and partially evaluated by means of many different management sub-systems. The net result of all the pertinent management sub-systems applicable to a given organizational unit might be thought of as an organizational "operating budget" expressed in both financial and non-financial terms. That is, a portion of each organization's operating budget is managed by means of different management system. The management systems viewed as a "whole", represents the control over organizational operating costs.

Organizational operating budgets are seen by this author as the connecting link between the administrative budget and the program control system. The operating budgets represent the consummation of program objectives and budget objectives—the melding of budget dollars into military outputs. As such, they are seen as the common building

blocks for both the budget and the programming process. Unfortunately however, the organizational unit is not an accounting entity in the Navy's accounting system. With the exception of industrial/commercial type activities and a few bureau shore activities which have developed complete performance-type budgets, total operating costs of Navy organizational entities cannot be readily obtained from accounting records and reports. Total operating costs for organizational entities can be obtained only by collecting "bits and pieces" of costs from all the management systems which are associated with that activity. Even if these costs could be accumulated, they would not satisfy present programming requirements because they do not have a common basis for measuring operating costs. Operating costs in the programming system are measured in terms of total obligational authority. Operating costs gathered from the different Navy management systems would represent a combination of measures. Some would be measured in terms of obligations and others in terms of actual resources consumed or expired operating costs.

The three dimensions of financial management examined in this thesis do not represent an integrated financial management system. "Real" integration exists only in that they each operate within the same financial envelopes approved by the Congress. Attempts to integrate these three dimensions in their present form will be unsuccessful until an integrated accounting system is developed which will permit the same financial data to be reviewed and reported in the three dimensions without the use of translation "crutches" such as the Navy Cost Information System.

An integrated accounting system, properly designed, could serve the needs of all levels of management. It could replace many of the reports and "sub-system" management accounting requirements presently needed to manage "slivers" of operating costs. Military organizational units could be designated as "common" planning and control entities in the three dimensions. Operating budgets for these units could be the financial "building blocks" on which both administrative budgeting and programming could be built. These organizational units could be the basis for collecting and reporting operating costs in an accrual accounting system where costs represent expenses or resources consumed. Fiscal control for budgetary purposes could be incorporated into organizational operating budgets by limiting expense categories or by issuance of expense allotment authorizations.

In conclusion, an integrated financial management system would require resolving basic differences which exist among the three dimensions of financial management but these differences are not insurmountable. Their elimination would not necessarily require a reorganization of the Navy but their resolution would require a major change in Navy accounting philosophy and a change in the program element structure. The new accounting philosophy would have to reflect organizational accounting entities which represent military outputs as well as budget projects which represent resource inputs. It would have to reflect decentralized financial responsibility over operating costs, that is, expenses would have to be controlled through operating expense budgets rather than through bureau controlled resource management systems. This would not necessarily remove bureau

"pre-control" over operating costs because the expense budgets would still require approval.

A shift of financial responsibility to organizational units might have many beneficial effects for management. It might allow organizational units to participate more in long range planning, thus reducing the tendency to look at budgets as "one year goals". It might encourage organizational commanders to better evaluate their operations and to suggest or adopt better methods for performing their missions. And last, it might motivate better financial management by removing what appears to be "free" resources from the bureaus.

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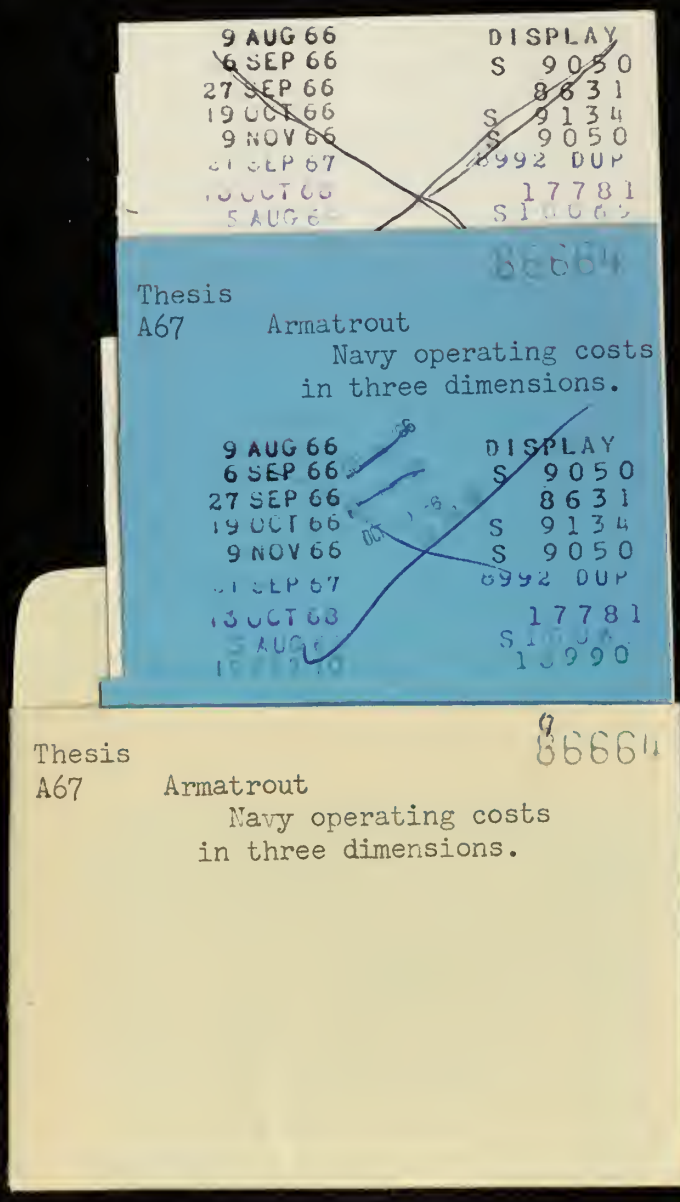
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